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Life on Foot: An investigation of pedestrian life in everyday urban space

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Life on Foot: An investigation of pedestrian life in everyday urban space

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Dedication

This thesis is dedicated to my parents, who taught me to find beauty in the everyday.

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Abstract

Life on Foot: An investigation of pedestrian life in everyday urban space

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Exploring pedestrian life in the drab, suburban fringe of Austin, Texas, this master's thesis aims to understand where and how people walk in an environment that does not seem to encourage it. Inspired by the literature of "everyday urbanism," the author studied the intersection of North Lamar Boulevard and Rundberg Lane in Austin, a place known for being high in crime, traffic crashes, and poverty rates. In an effort to document with the precision of traffic engineers how people walk in a city, this study found a rich tapestry of walking routes that go beyond the officially designated sidewalks and crosswalks typically seen as the place for walking. Pedestrians seem to create their own routes, traversing parking lots and landscaping. Furthermore, the walking environment seems to be racialized, to be gendered, and to attract only certain ages. This study suggests planning theorists adopt a broader notion of what makes a place "walkable," more closely studying the experience of pedestrians in environments such as Rundberg and Lamar. Further, this thesis suggests that practitioners design and plan such spaces after understanding by experience how people actually use and inhabit a space.

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Chapter 1: Introduction

Pedestrian life in American cities is well documented in downtowns, plazas, and other monumental spaces. But life on foot in the drab fringes of cities, dotted by strip malls, yawning parking lots, and sparse pedestrian infrastructure is less studied. My research aims to expand the conversation of walkability to more everyday urban spaces where people seem to walk in spite of poor design. Taking up Gehl's (2011) call for documenting how people use the city with the precision that traffic engineers document how cars traverse our urban areas, I documented how people create paths in an everyday urban space. More specifically, I was interested in people's paths that fell outside those formally created for walking, such as sidewalks and crosswalks. I drew on the concept of "everyday urbanism" as a way of looking at a city's mundane landscapes as vital sites of urban life (Chase, Crawford, & Kalinski, 2008; Kelbaugh, 2000; Kelbaugh & McCullough, 2008). Everyday urbanism values the overlooked, the interstitial, and the "everyday space (which) stands in contrast to the carefully planned, officially designated, and often under-used public spaces that can be found in most American cities" (Chase et al., 2008, p. 6).

Everyday urbanism traces its origins to ideas of people's everyday tactics inspired by Michel de Certeau (2011), who helps us think about cities not only from the God's-eye-view but from the perspective of people on the streets, and from Henri Lefebvre (1991), who introduced and developed the idea of the social production of space. De Certeau's concept of tactics as the practice of the ordinary citizen gives importance to the

study of everyday actions, which include something as simple as walking through a city. As space is produced, it can be of three types: spatial practice, representations of space, and *representational* space (Lefebvre, 1991); this study will focus on that final type, which relates to space as lived and hence created by inhabitants and other users of urban space. Furthermore, the discourse around insurgency and agency in planning provides another, corollary perspective on how space is produced (Diaz, 2005; Holston, 1999; Low & Smith, 2006; Mitchell, 2003). While these authors describe how the experience of users in public space shapes the space itself, suggesting that users of a space act in contradiction to impediments, my research drew primarily on de Certeau and Lefebrve and sought to describe how users in fact *create* the space.

My research also engages with previous studies on walkability beginning with Lynch (1960) and Whyte (1988), who provide methodological insights for studying a public space and walking paths. Whyte's landmark work and related studies that followed give a strong basis for my methods (Johnston, 2013; Neal, 2010; Project for Public Spaces, Inc., 2000; Rahi, Martynkiw, & Hein, 2012; Shrestha, 2015), while Lynch's concepts of scale and elements of the city inform my choice of study site, the intersection of Rundberg Lane and North Lamar Boulevard in Austin, Texas. More importantly, their work also provides insight into the decades of work done by planners and designers into making attractive public spaces.

While my study is not so concerned with how design and planning creates vibrant walking environments, the past work oriented toward planning and design practice inspired my own study of walking paths and contributed to my final discussion in

Chapter 6. This practice-oriented research includes work on the effects of the built environment on pedestrians (Adkins, Dill, Luhr, & Neal, 2012; Agrawal, Schlossberg, & Irvin, 2008; Ewing, Hajrasouliha, Neckerman, Purciel-Hill, & Greene, 2016; Handy, 1996; Saelens & Handy, 2008; Southworth, 2005). Other empirical research studies people's motivations for walking, from the need of safety, access, and comfort to demographically specific motivations (Alfonzo, 2005; Ewing et al., 2016; Handy, 1996; Hass-Clau, 2015). Fellow graduate students have also focused on walkability in downtowns and public plazas. For example, the Capitol Complex in the north of Austin's downtown was found to have a poor walking environment in an analysis that relied on pedestrian counts and an analysis of the built environment (Clifton, 2013). To address this problem, another study suggested using downtown alleys to create a network of open spaces (Hammerschmidt, 2009). Open spaces do tend to exist in downtowns in the form of public plazas, which was the focus of another study in Portland, Ore. (Johnston, 2013).

These studies focused on observing and drawing conclusions about the pedestrian environment and what can be done to encourage more walking. My work, on the other hand, aims to understand how people navigate the landscapes of "everyday" urban spaces. In a similar study, self-made paths were developed by students into a route to a high school in an underserved East Austin neighborhood (Mendez, 2015). My study will further Mendez' discussion around path-making in non-monumental urban space by documenting the paths and routes around the Rundberg-North Lamar Boulevard intersection in North Austin.

This intersection, located in an underserved neighborhood which is home to

Austin's most diverse populations and some of its densest residential areas, is known as a dangerous place to walk and drive. The intersection exemplifies the sort of drab, car-oriented urban area that everyday urbanism is interested in: a giant grocery store, a shabby shopping center with various ethnic stores, a gas station, and fast-food restaurants surround a bus-stop-dotted street. Around the intersection, I observed a constant stream of pedestrians during peak hours. A concentration of bus stops makes this a hub for people starting, ending, or transferring during their bus trip, and a concentration of small shops near dense garden apartments creates conditions for residents to walk to their daily errands.

The high number of pedestrians seems odd given the challenges which planners would typically consider impediments to walking: the area has a high rate of traffic fatalities, little sidewalk coverage, little tree cover, and entirely car-oriented commercial developments. I suggest that this area is socially "produced" through a popular understanding among planners, designers and others as a neighborhood that is poor, afflicted by crime and dangerous traffic, and lacking good pedestrian design. American Community Survey data shows that the area has some of the highest concentrations of poverty in Austin, and the city recently declared the intersection of Rundberg and Lamar as the city's worst, targeting it for $525,000 worth of median improvements (Wear, 2015). The Restore Rundberg project, a partnership between the Austin Police Department, University of Texas, and others to reduce crime around Rundberg and Lamar, has also highlighted the widespread view of the area as high in crime. A review of literature around good city design, beyond the scope of this study, would show that the

Rundberg and Lamar area's sprawling parking lots, high-speed and high-traffic roads, and visual clutter are not designed to encourage walking.

However, despite the obstacles and barriers created by poor design and planning, pedestrians in this everyday urban space seem to be "designing" and "planning" their own paths. This is supported by American Community Survey data, which shows a higher rate of walking to work in this area than in the Austin metro area. Having lived in the neighborhood for more than three years, I have personally experienced this contradictory pedestrian environment: even though this is not a comfortable public space, the intersection is nevertheless heavily trafficked by people on foot. This, I expected, is not because people "need" to walk because they have no other option. Instead, I hypothesized that people walk voluntarily because of the high concentration of services necessary to daily life found at this corner, such as bus stops, ethnic food stores, a public library, and dense apartments. In other words, as I approached this study I did not see the people walking in the Rundberg area as oppressed people subject to the conditions of an impoverished, socially plagued environment. Rather, I premised my study on the assumption that people have agency in their lives and that focusing only on the "misery," rather than people's complex efforts at producing space, can worsen their conditions (Simone, 2009, p. 333; Young, 1990).

My study aims to answer the following research question: How do people produce paths in everyday urban spaces in Austin, Texas? There are three groups of sub-questions: (1) the spatial questions of *where* and *how* people walk, (2) the demographic question of *who* does the walking, and (3) the conceptual question of *whether or not*

people follow engineered paths. Pathmaking, specifically through walking, is an important aspect of my broad research question. Walking is noted as an important way of understanding the city in the empirical research around pedestrian studies, and, more important to my research, in de Certeau's writings about walking as a spatial practice. Walking is the work of the "ordinary practitioners" of the city, and the paths made are the "intertwining, unrecognized poems in which each body is an element" (de Certeau, 2011, p. 93). Finally, the concept of "producing" paths relies on Lefebvre's concept of socially produced social space. Space, then, can be "representational," that is, space has symbolic meanings created through the practice of living in it (Lefebvre, 1991). Thus I arrive at my broad research question asking how people "produce" (from Lefebvre) "paths" (from de Certeau) in "everyday spaces" (from Chase et al.).

My mixed-methods research involved observations of the walking paths people create, brief intercept surveys of walkers, and GIS analysis of the area. This allowed me to describe with precision and rigor the many kinds of paths made around the everyday landscape of Rundberg and Lamar, using quantitative and qualitative descriptions of the everyday landscape, qualitative feedback from interviewees about their motivations for walking in the area, and quantitative analysis of neighborhood demographics and land uses. After some preliminary research, I noticed familiar faces, the regular panhandlers on the median strip asking for money from drivers, the performance artist known as Running Man, daily bus commuters, and friends who noticed me standing on the corner holding a clipboard and wearing a reflective vest.

My observations consisted of 16 hours of field observations, focusing my

observation times during 2-hour blocks of the late morning and afternoon rush hour on weekdays. I observed where people walked and drew their paths as best I could on paper, capturing the paths of most people who walked through my study space. I also documented some basic demographic information for each person whose path I drew. Then I entered that data using the Geographic Information Software ArcGIS in order to discern spatial patterns. Finally, the intercept surveys sought out pedestrians' motivations for walking in order to inform my spatial analysis and interpretation of the informal pedestrian paths.

This master's thesis will continue with five additional chapters. Chapter 2 provides the theoretical framework for my approach to "everyday urbanism." I begin with Lefebvre's notion of socially constructed space, reviewing contemporary implications of his theories. Next, I review research into walking as a "lived" experience, before concluding with a description of important work about the design and planning of public places. Chapter 3 describes my research context, explaining how the Rundberg and Lamar intersection represents an important "everyday" urban space, i.e. a landscape that resembles the drab, aging urban fringes of cities that everyday urbanism wants to examine. In Chapter 4, I outline my research methods, which drew from early public space work, such as Whyte's study of public plazas, but took a more contemporary approach and broadened its scope. Next, Chapter 5 presents my findings, introducing the concept of a "route," or elongated spaces reflecting an agglomeration of paths. This chapter will also discuss whom I observed to be walking as well as how people were walking through the space. Finally, Chapter 6 concludes with a summary of these

findings and expands on what this study means for practicing planners. The chapter will note insights for planning theory, such as providing an example of production of space and walking as a tactic to navigate the city, as well as insights for planning practice, advocating for an emphasis on such studies that focus on the pedestrian's perspective of the city particularly in everyday spaces. Finally, this thesis will end with a note on my critical perspective and, with that in mind, a brief outline of suggested improvements to the study area's pedestrian environment.

Chapter 2: Theory

I understand the city from the perspective of "everyday urbanism," which emphasizes the often forgotten, under-designed areas of cities that are typically home to low-income households and immigrants (Chase et al., 2008; Kelbaugh, 2000; Kelbaugh & McCullough, 2008). Everyday urbanism is not a theoretical construct, but a lens through which I am looking at the city, taking interest in the "mundane interstitial urban spaces mostly used by the public and [that] are vitally important to many groups" (Kim, 2012, p. 226) or the "overlooked, marginal places, from streets and sidewalks to vacant lots and parks, from suburbia to the inner city" (Chase et al., 2008, p. 7). In a sense, everyday urbanism, a perspective introduced first in a series of essays published in 1999 and based largely on the architectural vernacular of Los Angeles, valorizes the kind of urbanity that this study focuses on, one where hidden spaces and unseen walking paths are given meaning by the decisions of ordinary citizens using the public spaces, a city that is a "counterpoint to the modernist city with its attempts at imposing strict order, separation of uses, and fragmentation of urban space" (Elsheshtawy, 2010, p. 60). Indeed, the *Everyday Urbanism* book's introductory essay notes the importance of studying people's experiences in the city rather than just considering physical design:

> We believe that lived experience should be more important than physical form in defining the city. This perspective distinguishes us from many designers and critics who point to the visual incoherence of everyday space as exemplifying everything that is wrong with American cities. … The city is, above all, a social product created out of the demands of everyday use and the social struggles of urban inhabitants. (Chase et al., 2008, p. 7)

It is through this lens that my theoretical framework takes shape. It leads me first to the idea that the city is "produced" and next to the premise that walking can be understood as a "lived" experience. This conceptualization of the production of the city

through walking, in turn, provides me with a critical perspective on conventional approaches to public space and urban design.

THE CITY IS PRODUCED

In his book, *The Production of Space* (Lefebvre, 1991), the French philosopher Henri Lefebvre lays out his conceptual triad of space: (1) spatial practice, (2) representations of space, and (3) representational spaces (Lefebvre, 1991). In short, spatial practices is about how people come to "perceive" space. Representations of space refers to the *conception* of space, "the space of scientists, planners, urbanists, technocratic subdividers and social engineers," in essense the city as understood by dominant groups. Finally, representational space, which I am most interested in, refers to space "*lived* through its associated images and symbols, and hence the space of 'inhabitants' and 'users' ... ." Because of my study's focus on the practice of pedestrians, i.e. the individual person's pathmaking, it is important to understand this notion of space that is "*lived* through." The physical space here is important, but the objects of that space are symbolic, helping to create meaning in addition to the actions of the ordinary user of space (Lefebvre, 1991).

Indeed, everyday urbanism traces its origins to Lefebvre's idea that everyday life is important (Chase et al., 2008; Lefebvre, 2008). It is because of Lefebvre's ideas around social production of space that everyday urbanism is concerned with a city that is "created out of the demands of everyday use and the social struggles of urban inhabitants," something with which my study of walking is greatly concerned (Chase et al., 2008, p. 7).

The concept of "thirdspace," space that is neither the physical space we experience nor the representation of space, also comes from Lefebvre's spatial triad

(Soja, 1996). In his recasting of Lefebvre's triad, Soja describes thirdspace as a combination of real and imagined spaces. That is, there are concrete, material spaces that can be "empirically mapped," which Soja calls firstspace; and there are spaces that are our conceptions of space, the sensations we get in spaces, which Soja calls secondspace. Thirdspace is the combination of these two, i.e. a "mode of thinking about space that draws upon the material and mental spaces..." (Soja, 1996, p. 56). Building on Lefebvre's triad, Soja's notions of firstspace, secondspace, and thirdspace are a postmodern rejection of modernism's injuction that space is either X or Y. That is, Soja and other postmodern thinkers' idea that space is produced suggests that space is both X and Y. This sort of both-and thinking about space is useful to transcend the oversimplifcation of looking at just the physical form of the city or the feelings and imaginations that people have.

Indeed, both-and is an important way of thinking for many fields, notably in physics when Albert Einstein developed the then-controversial (and later Nobel Prize-winnning) idea that light is both a wave and a particle (Einstein, 1905). That is, light can sometimes behave as a particle and sometimes as a wave; similarly for my study space can simultaneously be observed from the God's-eye-view of the Planner and also from the experiential view of the everyday pedestian; each is useful for understanding the world. For my study, this both-and thinking encourages me to look at the built form and imagination of spaces to study what Lefebvre is calling representational space, or what Soja calls Thirdspace.

Another spatial theorist inspried by Lefebvre is the architect Yasser Elsheshtawy. Elsheshtawy (2011) describes how it is important to look at the "accidental and the unpredictable," particularly in the context of informality in cities. This idea emanates from Lefebvre's notion that "all forms of social experience are constituted in and through space," and that in these urban spaces we experience "everyday life" (Elsheshtawy, 2011,

p. 6). This focus on the everyday is inspired by Lefebvre's distinction between the modern reality of life, constantly-changing elements shaped by technology, and the everyday reality of life, subject to repeated and natural rhythms (Lefebvre, 2008). Thus, my study examines the quotidian of cities and seeks to document how people use cities in "everyday" ways.

Such an emphasis on the everyday coupled with rigorous empirical research was also important in a study of the liminality of open space in a Liberian informal settlement (Sletto & Palmer, 2016). The authors drew on Lefebvre's (2004) method of rhythmnanalysis, a mode of studying the rhythms of everyday life, particularly through studying people's walking through the city (Sletto & Palmer, 2016; Wunderlich, 2008). The authors relied on two notions of time; one is the "'linear' time (which) produces mechanical rhythms … that are 'acquired, rational, and in a sense abstract and antinatural,'" and the other is "'cyclical' time (which) … produces qualitative irregular social rhythms" (Sletto & Palmer, 2016, p. 5). Cyclical time is connected with this idea of the "everyday;" i.e. the routine, daily activities of life such as walking around a busy intersection in Austin, Texas.

WALKING AS A "LIVED" EXPERIENCE

Much of the literature on walking takes either an empirical or descriptive stance. By empirical I refer to pedestrian studies by planners, engineers, designers, and others concerned with technical questions about walking. These studies tend to ask people where they walk and what barriers they see in an attempt to solve the "problem" of getting people to walk more. By descriptive I mean the work largely of architects and other designers who are concerned with the physical appearance of the walking environment and how the built environment affects walking.

As mentioned in Chapter 1, my community of scholars, fellow graduate students in planning, has shown interest in writing terminal papers about walkability in downtown areas and popular plazas. These showed me helpful methods as well as how the built and social environment can be improved to encourage walking (Clifton, 2013; Hammerschmidt, 2009; Johnston, 2013; Rodriguez, 2010). Other research has focused on the effects of the built environment on walking, suggesting that features of the streetscape, as well as nearby buildings, affect the experience of walking (Adkins et al., 2012; Agrawal et al., 2008; Ewing et al., 2016; Handy, 1996; Saelens & Handy, 2008). One widely-studied paper provides a helpful summary of six criteria to designing a "successful pedestrian network: (1) connectivity; (2) linkage with other modes; (3) fine grained land use patterns; (4) safety; (5) quality of path; and (6) path context" (Southworth, 2005, p. 246). These criteria are especially helpful in developing improvements to the walkability in my study area by emphasizing the importance of connectivity, other modes of transport, land use, safety, and the path's quality and context. Related to this is the Theory of Routine Mode Choice Decisions, which states that walking can be "promoted through … five steps: awareness and availability …, basic safety and security …, convenience and cost …, enjoyment …, and habit" (Schneider, 2013, p. 128). Another study that looked at midblock pedestrian crossings along North Lamar Boulevard in Austin found that pedestrian safety along this corridor is lacking, suggesting improvements such as midblock crossings, raised medians that encourage pedestrian use, filling in missing sidewalks, and more (Ding, 2012).

Empirical research has also considered people's motivations for walking, another important aspect of my research. While transportation research until recently has concentrated largely on cars and little on pedestrians, significant research has also considered the motivations of walkers, such as the need for access, safety, comfort, and

pleasure, respectively, as well as the role of proximity to destinations, and elements of the streetscape (Alfonzo, 2005; Ewing et al., 2016; Handy, 1996; Hass-Clau, 2015). Demographic changes have made walking a more important mode of transportation, particularly among the millennials who are less likely to drive or who live in distant suburbs (Hass-Clau, 2015). Specifically in Austin, one study, albeit slightly dated, surveyed residents of neighborhoods built during three different eras of city design (from the early 1900s with small, gridded blocks; from early post-World War II suburbanization; and from the late-modern era of subdivisions built in the 1980s with curvilinear streets), asking about the influence of elements of urban form on people's choices to walk (Handy, 1996). The study found that distance to destinations, followed by the quality of the pedestrian environment around destinations, is most important to a pedestrian's choice to walk (Handy, 1996). Beyond Austin, a study of streetscape features in New York City found significant positive correlations between "windows on the street, the proportion of active street frontage, and the number of pieces of street furniture" and pedestrian counts (Ewing et al., 2016, p. 15). Related to this was a study in a predominantly single-family neighborhood looking at "green" streetscape features, such as concrete rainwater catchment features and long grasses. The study found that "parks, separation from vehicle traffic, and pedestrian network connectivity" improve the pedestrian environment (Adkins et al., 2012, p. 499). Contrary to conventional wisdom among planners (O'Sullivan & Morrall, 1996), Agrawal et al. (2008) found that pedestrians will often walk more than half a mile to transit, a so-called "utilitarian" walk trip aided by basic sidewalks and direct routes, thus expanding the "community canvas" that planners and designers should make a walking environment for (Agrawal et al., 2008).

In addition to the vast empirical walking literature there is a significant body of descriptive work about pedestrian spaces, relying primarily on well-known 20th Century architects such as Jan Gehl, Kevin Lynch, and Bernard Rudofsky. Although what follows will be an incomplete log of design-based thinking around pedestrian life, this summary gives a good representation of the types of architectural descriptions of life on foot.

Danish architect Jan Gehl's work of documenting how people use the city in the context of the built environment is particularly helpful. His study of pedestrian space is premised on the normative ideal of a city with quality pedestrian space. His methods are based on observing how space is used as well as how the built environment affects people's use (Gehl, 2011; Song, 2016). He found that the "usual radius of action" for pedestrians is 400 to 500 meters (about ¼ mile) and that streets need to be designed with spaces for pedestrians to pause and linger, which will encourage a lively environment (Gehl, 2011). He also introduced the notion of spaces that invite or repel people. Spaces that invite allow people to see what is going on, have smooth transitions between the public and private space, have a short manageable route, give the pedestrian a place to go to and something to do; those that repel, quite simply, don't do these things (Gehl, 2011). Finally, Gehl includes drawings of his surveys of pedestrian routes, which offer a good example of the kind of data collection tool I would like to use.

Planner/architect Kevin Lynch's landmark work *The Image of the City* is another important example of how designers study pedestrian life in cities. Lynch lays out five elements of the city – paths, edges, districts, nodes, and landmarks (Lynch, 1960) – in order to describe the experience of the pedestrian in the context of the built environment. I would like to highlight the path, which Lynch says can include streets, walkways, transit lines, canals, and railroads. Paths are "the predominant city element" and the means by which most people understand the city (Lynch, 1960, p. 49). Lynch (1960) also

notes the importance of looking for the "hidden forms" in cities, not just limiting ourselves to the most obvious physical cues of the city.

Finally, architect Bernard Rudofsky focuses on the built environment's effect on the life of the walker in his critique of American pedestrian life, *Streets for People*. He relies largely on architectural descriptions of pre-modern/pre-automobile European cities and districts that have a successful pedestrian infrastructure. Similar to what Gehl, Rudofsky notes that people come to streets "where the action is," and that historically streets were where the "drama and comedy" of life took place. Weddings, funerals, processions, prayer all happened in the street (Rudofsky, 1969). As much of American city life was born after the advent of the automobile, "having separate streets for humans and vehicles" is a foreign idea for us, Rudofsky argues. He would likely agree with the idea that while "pedestrianization" has been a way to revitalize city centers in Europe, US planners are not so interested in doing so (Hass-Clau, 2015). Physical descriptions of old cities with pedestrian roads show how they connect with the rest of the built form, including large staircases that act both as a route and space to linger, or dense markets called bazaars where the walkway and store seem to blend together. In all, Rudofsky's critique offers a strong example of how architects describe the physical forms associated with pedestrian life.

Other theorists understand walking as a productive activity and are informed by Lefebvre's concept of representational space. Some of the literature from this perspective is based on the idea of "insurgent" use of public space. Here, insurgent use of public space can attempt to counter the "modernist system of traffic circulation" that eliminates streets with "urban crowds and the outdoor political domain of social life that the street traditionally supports" (Holston, 1999, p. 162). It is also helpful to define the meaning of "public" space that informs this literature. One helpful definition is "the range of social

locations offered by the street, the park the media, the Internet, the shopping mall, the United Nations, national government, and local neighborhoods" (Low & Smith, 2006, p. 3). More specifically, public space occurs in "geographies of daily movement," which for my study includes the body-scale pedestrian environment (Low & Smith, 2006). Hegemonic forces of capitalism, including privatization, paralyzing and distracting advertising, and a pedestrian realm that is kept separate from the rest of the city can be countered by insurgent practices (Banerjee, 2001; Carmona, 2010a, 2010b; Matthew Crawford, 2016; M. B. Crawford, 2015; Hou, 2010; Sorkin, 1992). People can "disrupt hegemonic mappings" through the "banal transgression" by resisting the state's pressure to use cities in a particular way through zoning, property rights, and taxation (Amin, 2002; Simone, 2009, p. 11). This area of literature indicates the importance of understanding these forces and tensions around the use of public space by people, including those who are walking. Understanding the private takeover of cities allows everyday practitioners to preserve their "right to the city," actualizing the medieval maxim that "city air makes people free" (Mitchell, 2003; Sorkin, 1992, p. xv).

Insurgent practices can also rely on the malleability of space. People on foot can produce space in how they claim "residual spaces," described as "unused … and derelict urban sites … (that are) a relatively recent urban phenomenon" (Villagomez, 2010, p. 81). Residual spaces are produced and can be useful for inhabitants. They can be between, around, atop, wedged between or below existing spaces, exist in redundant or oversized infrastructure, or be in void spaces (Villagomez, 2010). The "mixed use" sidewalk is also a space that can be produced into a different space. For example, a sidewalk in Ho Chi Minh City, Vietnam had a variety of meanings throughout the day depending on whether it was being used as a shop, as restaurant seating, or as space to pass through (Kim, 2012). In a context that is more relevant to my largely-Latino study

area, one researcher studied the "cultural insurgency" of Latinos in American public space (Rios, 2010, p. 99). Finally, homeless people are a prime example of city residents who "produce" a great deal of space through their daily practice (Cloke, May, & Johnsen, 2008; Mitchell, 2003). The work around "performed" paths of homeless people around the city turns me to an important idea: that "rereading" the city to focus on people's "tactical" uses gives us a more complete understanding of how people produce the city through walking (Cloke et al., 2008).

Thus, I am drawn to work of Michel de Certeau and his conceptualization of two ways of looking at the city: a view from the top of a skyscraper to see the city from a God's-eye-view, and a view from the level of pedestrian, in "the dark space where crowds move back and forth" (de Certeau, 2011, p. 92). De Certeau also notes a "desire to see to the city," and through the eyes of the ordinary practitioners of the city, particularly through their walking (de Certeau, 2011, p. 92). Planning is an expression of state power and thus is how the state can socially construct space (Gottdiener, 1985; Lefebvre, 1991) from de Certeau's metaphorical skyscraper. It is important then to also examine spaces that "remain beyond the control of local residents," where those using the space are "*un*-privileged" (Gottdiener, 1985, p. 285). This points to the importance of looking at the Rundberg neighborhood in Austin, where a high proportion of residents are lower-income, immigrant, and thus not traditionally involved in the community's decision making. Also important is de Certeau's idea of "tactics" and "strategies." A strategy happens when "a subject of will or power" is isolated from its environment and can act in a way that opposes what the power structure seems to dictate; a strategy, in a sense, is the work of politicians, scientists, and economists, de Certeau argues. A tactic, on the other hand, is an action that belongs not to the powerful, but to others; everyday practices, then, including walking, are tactical (de Certeau, 2011).

In considering de Certeau's notion of tactics and strategies, I am again drawn to Soja, who discusses de Certeau's recasting of Lefebvre's critique of everyday life (Soja, 1996). That is, de Certeau is furthering Lefebvre's critique of everyday life "into an exaltation of the view from below," advocating a perspective of urban reality that is free from the hegemonic view on high (Lefebvre, 2008; Soja, 1996). Soja notes that this is done at the expense of "'elevated' perspective on urban reality," privileging the view from below at the expense of the view from above. This perspective influenced a great deal of the contemporary cultural criticism of cities "who see a recalcitrant and masculinist voyeurism in nearly all macro-scale 'big pictures' of urban life, preferring instead to focus exclusively on the intimacies of the local, the body, the street, the everyday" (Soja, 1996, p. 312). Conversely, I take this as a caution to not focus entirely on the view from the perspective of the pedestrian. In order to better understand how the built environment shapes people's development of informal walking paths, I decided to choose a scale beyond just the body. In so doing, I sought to pursue a both-and perspective of understanding the city's material forms as well as its imagined forms.

Drawing on de Certeau (2011), another author notes that walking is a way to discover and create in the world (Wunderlich, 2008). In this way, walking is to the "urban system" as speaking is to language (de Certeau, 2011): walking is a way of actualizing the city, showing us where people can go, where people want to go, and where people struggle to go. An extension of the creative power of walking is its ability to "discover and transform" the city, bringing about change (de Certeau, 2011; Wunderlich, 2008). Returning to my community of scholars, another UT master's thesis discussed how de Certeau's spatial practices informs his analysis of how "spaces are remade by individual users" of a bus-rapid-transit system (Zigmund, 2012). Thus, another author notes "the power of city residents to challenge officially sanctioned urbanism," or to use de

Certeau's term "strategies" (Elsheshtawy, 2011, p. 6). Formal planning being an expression of state power (Gottdiener, 1985), then, tactical practices can challenge that. Practicing planners could benefit from such on-the-ground, *in situ* research of how people experience and use the city; it is vital to learn from actual experience, two authors argue, and that "street level problem solving" work can better help homeowners comply with code violations (Wegmann & Bell, 2016, p. 28). Furthermore, studying tactics such as walking helps foster a better understanding of how one can "change the organization of spaces" (Elsheshtawy, 2011). In critiquing what some have described as de Certeau's "romanticism" of the walking experience, another author emphasizes that policymakers study the broader concerns of "who walks and why," focusing not only on walking as a mode of transportation but also as it relates to public space, a means of reading the city, walking as an art, and more (Middleton, 2011).

PUBLIC SPACE AND URBAN DESIGN THEORY AROUND PEDESTRIAN SPACES

This final section of my theoretical framework will explain a set of theories that helps me more pragmatically understand, analyze, and explain what I observed in my research of pedestrian life in the everyday urban environment of North Austin. While this section will describe the work of public space and urban design theory and research around pedestrian space, I am presenting this in the context of de Certeau's notion that walking can be a "tactic" used to produce the city in "everyday" environments like North Austin's Rundberg area (de Certeau, 2011).

First, I return to Gehl, who, in addition to his work of describing the pedestrian experience in the context of the built environment, introduced the notion of documenting how people use the city with the precision that traffic engineers document how cars do.

This framing of studying pedestrian use with such *precision* will be important as I later describe my research methods and question.

The well-known study of public plazas by William H. Whyte offers another, more sociologically based understanding of pedestrian life. His 1980 study of public plazas in New York City was remarkably rigorous in its recording and documenting of how people use built plazas in downtowns. Whyte found that "people tend to sit where there are places to sit," an intuitive but profound insight that led planners and designers to perform similar studies of downtown plazas and simply take the time to observe simply *how* people use plazas (Johnston, 2013; Neal, 2010; Rahi, Martynkiw, & Hein, 2012; Shrestha, 2015; Whyte, 1988). Whyte's work focused largely on the physical form, noting, for example, that benches are most used when they are "two backsides" wide, that moveable chairs encourage use, that people's walking paths tend to converge toward the edge of a space, and that people enjoy running water (Whyte, 1988). Whyte's work has influenced contemporary urban design practice through the Project for Public Spaces, founded by his research assistant, which publishes a handbook for public space design (Project for Public Spaces, Inc., 2000). This work notes, for example, that pedestrian spaces should not be dominated by cars, should have functional features that people can touch and use, and should create paths that take people somewhere but give places to "stop and relax" (Project for Public Spaces, Inc., 2000). Related to my study's concern with people's individual agency, the manual also notes the "importance of the ordinary citizens in creating good public spaces," encouraging planners and designers to "uncover people's talents and then incorporate them into the process in a meaningful way" (Project for Public Spaces, Inc., 2000).

Another key foundational thinker in research on pedestrians and public space has been Jane Jacobs, who introduced the idea of the "intricate sidewalk ballet," giving a

term for the diverse range of pedestrian uses in the public space (Jacobs, 1961, p. 50). The intricate array of movements that happen on a sidewalk makes it safe and economically prosperous, Jacobs argues. Helpful methods for studying pedestrian movement in public space include asking pedestrians to map their path from their home to a transit station, as well as conducting observations of how people walk through downtowns and public plazas (Agrawal et al., 2008; Clifton, 2013; Hammerschmidt, 2009; Johnston, 2013). Focusing on a small, human-scale context, one study explored the movements of people in a liminal space within an informal settlement in Monrovia, Liberia (Sletto & Palmer, 2016). The authors used a method of several-hours-long observation with GIS-based spatial analysis to describe the mobility and rhythms of people in the study area (Sletto & Palmer, 2016). A similar study referenced earlier looked at the rhythm of use on a sidewalk in Ho Chi Minh City, Vietnam, making a cartography of the different kinds of use that happen in the public space of a sidewalk throughout a day (Kim, 2012). This empirical work on public space complements my conceptualization of everyday urbanism, suggesting that the tactic (de Certeau, 2011) of pathmaking is central to the production of space (Lefebvre, 2008).

To conclude, my theoretical framework is informed by three areas of inquiry: (1) research concerning the social "production" of the city, drawing largely on the theories of Henri Lefebvre; (2) the work on walking as a "lived" experience in a variety of fields, particularly inspired Michel de Certeau; and (3) theories of public space and urban design around pedestrian spaces, shaped to a large extent by the landmark work of William H. Whyte. This theoretical framework illuminated my understanding of "everyday urbanism" and informed my reading of pedestrian behavior in my study area: the intersection of Lamar Boulevard and Rundberg Lane in North Austin.

Chapter 3: Research Context

The intersection of North Lamar Boulevard and Rundberg Lane exemplifies "everyday urbanism." The intersection is slightly more than one mile north of what is considered to be Austin urban core, and about 7 miles north of downtown. A short drive from the prosperous, urbanizing neighborhoods that Austin is becoming increasingly well-known for, the intersection of Rundberg and Lamar is a world apart. Here, public attention is focused not on rejuvenation from economic prosperity but on deteriorating conditions from neglect. This chapter will explore more of the rich dynamics of the research site. For my research, I divided the study area into four sectors, one for the area around each corner of the intersection, shown in Figure 3.1; I will be referring to those sectors of the study area in this chapter and describing them in detail. This section will also explain the dominant stories of the social dynamics of this intersection.

From the perspective of everyday urbanism, this intersection is one of Austin's most culturally diverse and epitomizes the visual disorder and mundane design that everyday urbanism valorizes. A converted Wal-Mart, for example, now serves as a popular multi-use facility representing "everyday" reuse. Much of Lamar lacks a sidewalk, although my study area has near-complete sidewalk coverage. The sidewalk ends on the northbound side of Lamar about 300 feet north of Rundberg. Often a passerby can find an informal market along Rundberg where a (usually Latino) family is selling seasonal items such as Easter bunnies, Fourth of July decorations, or Valentine's Day flowers. In a trendier part of Austin, this may be called a "pop-up market," promoted on Instagram and other social media outlets for local artisans, but here it is often families simply trying to get by selling whatever they can. This sort of temporary use "hijacks these spaces, changing their meaning" (Margaret Crawford, 2008, p. 30).

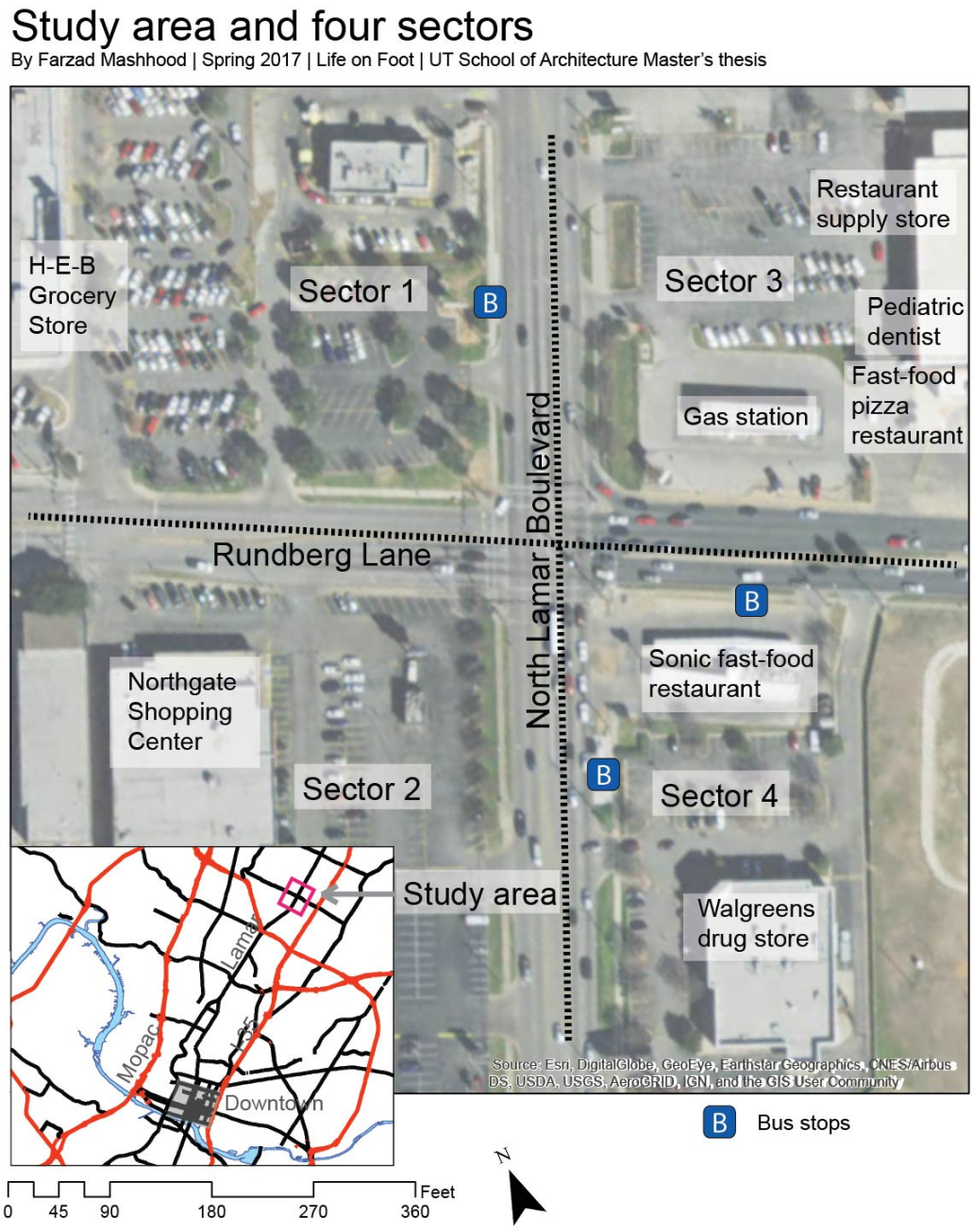

Figure 3.1: Map of study area and four sectors

The area around the intersection has a wide cultural diversity, especially in food. There are several small halal and South Asian markets as well as two Hispanic grocery stories, within a quarter-mile of the intersection. These stores are a short walk from a 77,000 square foot HEB grocery store where the parking lot is usually packed with cars. I also saw a truck operated by Mobile Loaves and Fishes, a nonprofit that serves homeless people in Austin, distributing food near the Little Walnut Creek Library, although its website does not indicate the intersection as a stop (Mobile Loaves and Fishes, 2015).

Historically, the Rundberg and Lamar area was part of a separate city called Fiskville. The population from the 1800s to the 1930s bounced around the 100s, hitting a low in the 1930s with a population of 50. In 1959, Fiskville's school district was annexed by Austin; soon after, the City of Austin began annexing parts of Fiskville (Smryl, 2010). After Austin began annexing the area, the area experienced "unplanned growth" as "(m)uch of the area was spot, strip, and interim-zoned" (North Austin Civic Association, 2000, p. 9). By the 1980s, city planners gave the area more consistent planning attention, drafting the North Lamar Area Study in 1985 that gave the area permanent zoning and led the way for further development in the area around Lamar and Rundberg.

Today, Rundberg and Lamar is an intersection that is recognized as unsafe for driving and walking, earning it at one point the title of most dangerous intersection in Austin (Wear, 2015). This led to the city spending $647,000 to improve the intersection, with work beginning in November 2016, shortly after my research was conducted in October 2016, and continuing through the Spring of 2017 (City of Austin, 2016). Figure 3.2 shows a city-made diagram of the area's improvements. The city dedicated additional transportation spending to this area early in 2016 when the City Council voted to allocate $21.8 million evenly among the city's 10 districts (January 28, 2016 Austin City Council meeting, 2016). Of the $1.9 million going to District 4, where the intersection of

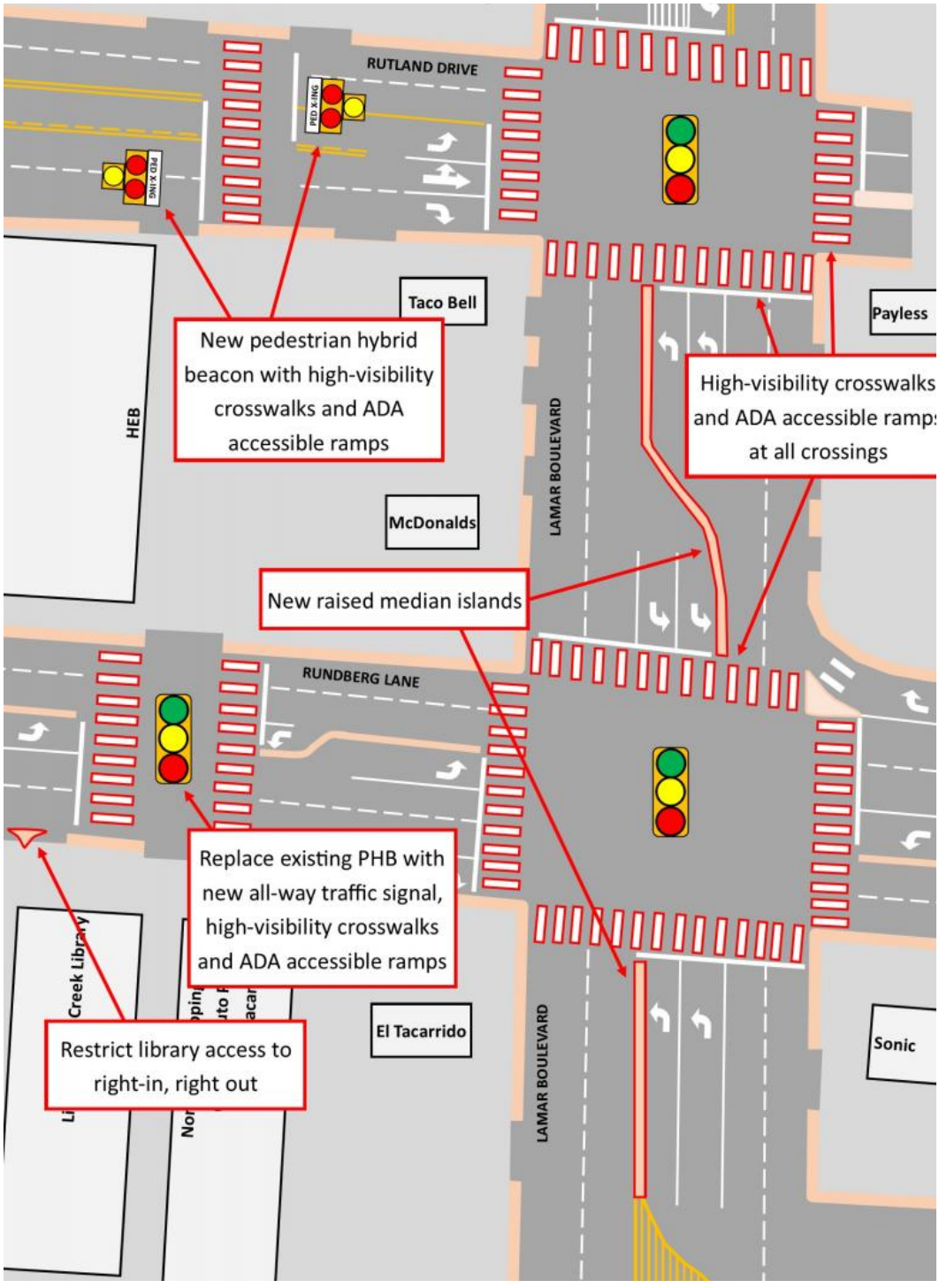

Figure 3.2: City of Austin map of Rundberg and Lamar improvements
Source: Austin Transportation Department, austintexas.gov/news/vision-zero-construction-begin-monday-third-safety-improvement-project

Rundberg and Lamar is, a large proportion, $730,000, went to sidewalk improvements along a 3-mile stretch of Lamar that includes the intersection I studied.

The decision to allocate that funding, however, was not without controversy. The city council debated over several meetings whether to distribute the money evenly across districts or give districts with higher transportation infrastructure needs (such as District 4) a larger share of the money. Ultimately, the council decided to spread the money evenly (Whitson, 2015), much to the chagrin of local social equity advocates, with one, Bob Batlan of Austin Interfaith, saying, "We know that equal does not mean equitable. … Allocation of funding equally among the districts without regard to equity is not acceptable" (December 17, 2015 Austin City Council meeting, 2015).

The present formal pedestrian environment around the Rundberg and Lamar intersection consists of sidewalks that follow the roads. Viewed in the context of pedestrian design manuals, it becomes clear the sidewalks there go against many principles of good sidewalk design, such as having a "buffer zone," empty space between the roadway and the sidewalk, of four to six feet and sidewalks wider than six feet around transit stops or other places with high pedestrian traffic (Pedestrian and Bicycle Information Center, n.d.). In many places around Rundberg and Lamar, the sidewalk is immediately adjacent to the street or separated by a narrow grass strip.

Moreover, the Rundberg area has become closely associated with crime, poverty, and other social problems so much so, in fact, that it attracted the attention of university researchers, the police department, and the U.S. Department of Justice. In 2012, the federal agency granted the police and the university a $1 million per year grant for three years to study efforts to reduce crime in the area for a project called "Restore Rundberg" (Harmon, 2014; Whittaker, 2016). Researchers studying the area called it "persistently distressed;" thus, Restore Rundberg led to increased police foot patrols especially in areas

noted as crime hotspots. In these hotspots, which are located about a mile from my study area, 62% of residents surveyed by police reported not feeling safe (Yuma & Springer, 2014). By the end of Restore Rundberg's grant funding, teams of collaborators including police officials, city planners, other professionals, and volunteers started various efforts that still continue. For example, after a police officer noticed the many community and educational institutions along Rundberg Lane – there are five schools, a library, and two community centers along a three mile stretch – the community coalesced around the idea of calling this area the Rundberg Educational Advancement District (City of Austin, 2015b). Since forming in 2015, READ has held various community events, including festivals, school beautification projects, and holds monthly meetings (READ, n.d.).

Furthermore, Rundberg and Lamar is the venue for a local performance artist, Broderick James. James is a resident of the Rundberg area, someone I have personally met and spoken with many times while passing through the intersection. While my study will not focus on James' insights, he has appeared widely in local media and is even the subject of a short documentary (Tam, 2013). He sees his artistry as bringing a message of hope and inspiration to "a community that is torn down by a lot of negative connotations" ("Rundberg's 'Running Man' Looks to Take His Message Beyond Austin," 2014).

The intersection also became a site of significant social discourse and unrest in early 2017 after a series of raids and arrests led by the U.S. Immigration and Customers Enforcement agency (Aguilar, 2017; Goldenstein, 2017; Marloff, 2017). Dozens of people, including at one point a group of high school students who walked out of class in protest of the arrests, protested around the Rundberg and Lamar intersection against President Donald Trump's anti-immigrant discourse and policies that led to the widespread arrests by ICE agents in Austin and several other U.S. cities (Rein, Hauslohner, & Somashekhar, 2017; Stone, 2017).

In terms of land use and demography, this is also one of Austin's densest and demographically diverse areas, shown in Figure 3.3. The five census block groups within ¼ mile of the intersection of Rundberg and Lamar have a combined density of 10,796 people/sq. mi., ranging from 7,776 to 23,689 people/sq. mi. each. This compares with of 13,190 to 48,437 people/sq. mi. in the block groups in the West Campus area, which is the densest neighborhood in the city and includes high-rise student housing. The combined density of the five block groups in my study area would make it more dense than 92% (536) of Travis County's 581 census block groups (U.S. Census Bureau, 2014). Additionally, three of the five block groups in my study area are among the county's 18 densest. This population density stems from the many garden apartments built in this area decades ago, and which today provide much of Austin's remaining affordable housing stock. Aside from density, this area is demographically diverse, with a mostly Hispanic population (73.5%) but also some White non-Hispanic (13%), Black (7.6%), Asian (4.9%), and others (1%) (U.S. Census Bureau, 2014). Indeed, in my personal observations, I have found this area to have a high population of Asian immigrants and especially refugees from the Democratic Republic of the Congo, Nepal, and Iraq. This bears out in the diversity of stores found in a single shopping center in the study area: a Mexican meat market; an Indian/Pakistani restaurant; a music store, locksmith, and hair salon all with signs exclusively in Spanish; a Chinese restaurant; a Salvadoran restaurant that replaced a Gyro shop; a Halal grocery store; a national auto parts store; and a pawn shop. North on Lamar is a former Wal-Mart that has been converted to an indoor flea market, banquet hall, trampoline park, and car audio installation shop; the parking lot has several food trucks at a time. All this diversity along North Lamar has been enough to attract the interest of an architectural historian who has termed the area Austin's "most cosmopolitan district" (Lopez, 2016).

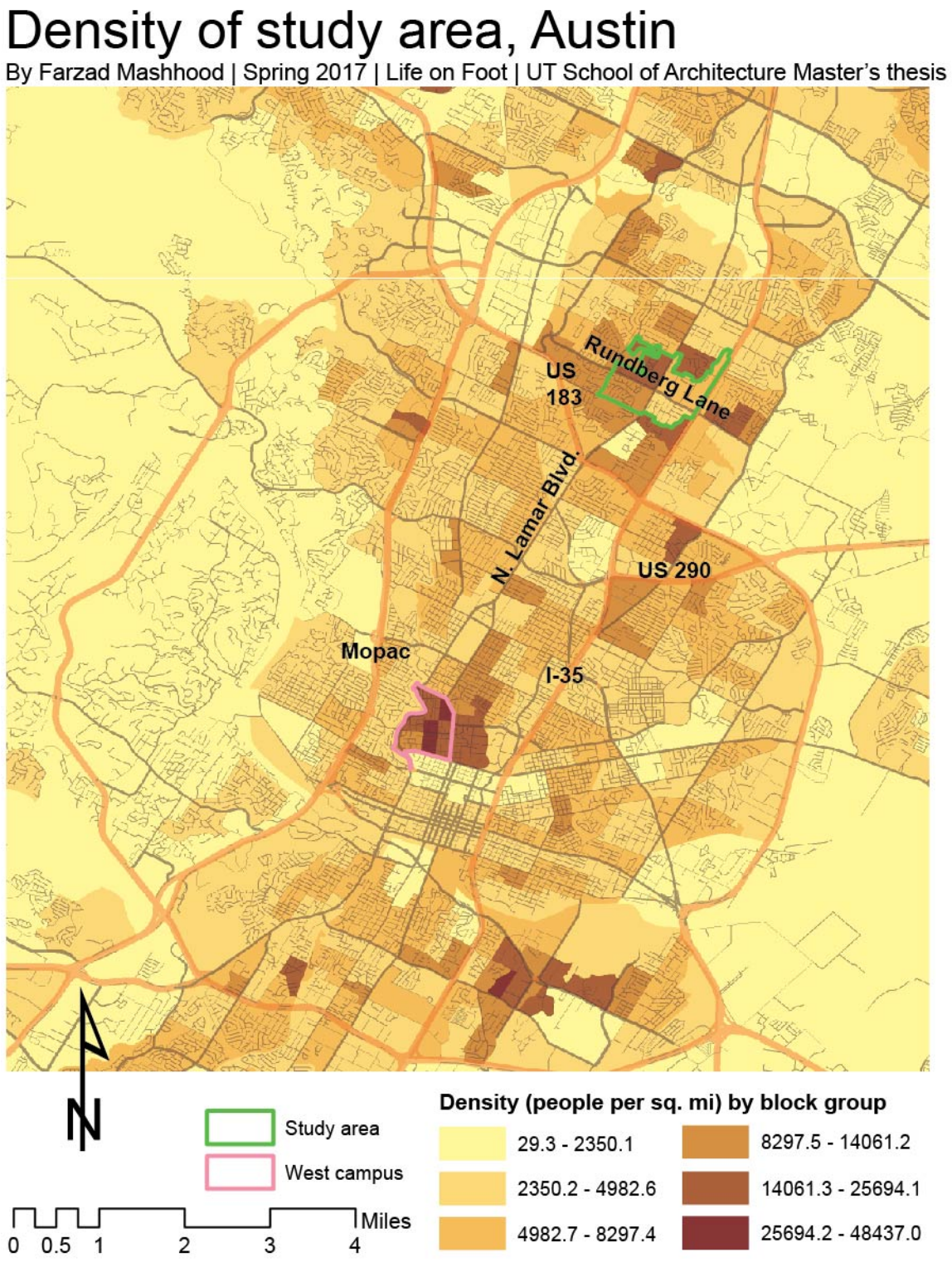

Figure 3.3: Density of Austin Census block groups

Also interesting is the study area's higher rate of reliance on transportation other than solo car trips. Table 3.1 below compares the transportation modes for trips to work between the study area and the Austin-Round Rock metro area. In the study area people are more likely to carpool (2.7 times), take public transportation (2.8 times), and walk (1.6 times), showing a greater reliance on the non-car infrastructure. Bus travelers, for example, are often also pedestrians because they typically need to walk to the bus stop.

	Study area	Austin-Round Rock MSA
Drove alone	57.9%	76.0%
Carpooled	28.2%	10.5%
Public transportation	6.9%	2.5%
Walked	3.0%	1.9%
Other/worked at home	3.9%	9.2%

Table 3.1: Transportation modes for trips to work in study area and Austin-Round Rock MSA. Source: ACS 5-year estimates, 2010-2014.

This study site is also notable for the presence every evening of a cloud of grackles, a bird common in many southwestern U.S. and Mexican cities. These birds congregate in and near the H-E-B parking lot every evening around sunset, sitting primarily on the power lines and in the trees, a phenomenon well-known to people throughout Austin (Buchele, 2016). This behavior traces to the evolutionary history of grackles, which were bred in the 1400s and 1500s by the Aztecs to live near humans, particularly in town squares (Buchele, 2016; Wehtje, 2003). This suggests, perhaps unsurprisingly, that the H-E-B and its neighbors are a town square for this part of North Austin, at least according to the behavior of thousands of black-feathered, long-beaked birds.

Finally, as mentioned earlier, I divided this study area into four sectors that surround the Rundberg and Lamar intersection, shown in Figure 3.3. The four corners

are: (1) the far end of a parking lot in front of an H-E-B supermarket, near two bus stops; (2) the Northgate Shopping Center, a long strip mall with various small businesses including restaurants that make food from a wide range of and other stores mentioned earlier; (3) a large parking lot with an H-E-B gas station in front of a fast-food pizza restaurant, pediatric dentist, and a warehouse-style restaurant supply store; and (4) a Sonic fast food restaurant and Walgreens drug store, fronted by two bus stops. This brief introduction will describe the experience of walking in the different sectors. Consistent among all the sectors, except perhaps less so in Sector 2, was an overwhelming feeling of heaviness of the air I was breathing after about an hour. I hypothesize that this is because of the pollution from the passing cars, trucks, and busses, as well as the fumes from the gas station. The air's effect on walkers is beyond the scope of my project, but would be the subject of a worthwhile exploration of "everyday" urban environments.

In the first sector, shown in Figure 3.4, it was difficult to distinguish between people passing through and those walking to their car. It was also clear, however, that the H-E-B is the most significant attractor of walkers in this area. Because I was typically standing closer to Lamar, it was difficult to account for everyone crossing the Rundberg mid-block crosswalk to walk into the H-E-B. Walking in this environment presented obstacles in the form of parked cars that made taking a straight diagonal route difficult, so it was more common to see people following the routes for driving when traversing the parking lot. This lot also has considerable tree coverage, making it a more shaded and provide a welcome feeling of enclosure to walk through.

Figure 3.4: Photo of Sector 1
In this photo, taken near Rundberg Lane on the left, we see in the foreground a path beaten into the grass signifying where many people have walked as well as the HEB and its large parking lot.

Sector 2, shown in Figure 3.5, also had a relatively full parking lot with many people accessing their cars from the stores. But this vast parking lot has no trees or unpaved surfaces. Many people walked along the storefronts, even when not going into any of the stores. This creates a sense of privacy from the major roads and a more enclosed environment. It is not as loud as walking along Lamar where people drive 45 miles per hour or faster. This area is, however, noisy from the talking of people, the hum of idling cars, and the music blaring from a speaker the pawnshop is trying to sell. A taco stand in the middle of the parking lot attracts many visitors, but almost all by car. Every afternoon, a school bus drops off students on the south end of the parking lot near a large apartment complex. The students disperse throughout the parking lot, with many crossing

it as they head toward Rundberg. There are also several trashcans located near the shops, but the walkway is fairly clean. Along the parallel stretch of Lamar, there is only a trashcan in front of a bus stop, but there are many old magazine boxes that are typically full of trash. The roadside is strewn with trash. Finally, on the side of the library near the mechanic shop, many homeless men sit throughout the day.

Figure 3.5: Photo of Sector 2
This photo, facing toward North Lamar Boulevard, shows the diversity of uses that can be found in Sector 2, including banking and informal food sales, such as Mexican-style corn sold from a pickup truck.

In Sector 3, there is another vast parking lot with one narrow strip of grass and trees inside the lot. The lot, depicted in Figure 3.6, typically does not have many cars parked in it, making diagonal routes from Lamar to the shopping center easy to make. This sector also has a break in the sidewalk, as it ends along on the northern end of the lot on Lamar. Here, people tend to keep walking on a strip of grass and then entering a concrete-lined ditch. The building with the restaurant supply store, dentist, and pizza

shop has a high-roofed arcade in front, which makes for a nice, open but shaded environment. I observed many people walking along here but not accessing the shops, indicating it may be a route people prefer.

Figure 3.6: Photo of Sector 3
This image, taken from the sidewalk along North Lamar Boulevard shows flowers growing in the fenced-in stormwater pond in the foreground, a gas station to the right, and the sector's shops off in the distance.

The fourth sector, in Figure 3.7, has the least open space and there are several areas where regular walking has created a path in the grass that separates the parking areas. This sector's parking lots also back into an elementary school. The bus stop on Lamar is a major source and attractor of walkers who come from all directions. Cutting diagonally across the Sonic parking lot is easy as there are no parking spaces, except for the drive-up lane, making the lot easy to navigate. In the Walgreen's parking lot, there are many trees, creating a great deal of shade. There is also a walkway in the middle of a row

of parking spaces that many people seem to use. This corner is also home to the Rundberg Running Man, who, along with his friends, acts as a sort-of "mayor" of the space (Whyte, 1980). He has created his own dance floor on a steel panel located directly on the ground on the edge of the Sonic parking lot.

Figure 3.7: Photo of Sector 4
Featuring the well-known Rundberg Running Man performing a routine, this photo, taken from along North Lamar Boulevard, shows the sector's Sonic fast-food restaurant and the Walgreens to the far right.

These sectors facilitate a closer analysis of pedestrian behaviors among the visual cacophony, informality, and adaptive reuses of this "everyday" urban space (Chase et al., 2008). This intersection is of great interest in the Austin area, as it has been targeted for transportation infrastructure improvements to address its high rate of traffic fatalities as well as public safety investment as part of the Restore Rundberg project. These negative narratives of the Rundberg and Lamar intersection contrast with its great cultural and ethnic diversity, sense of community, and high population density. To study the

experience of walking in this context, I developed a series of research methods discussed in the following chapter.

Chapter 4: Methods

This chapter will present my methods, starting with how I conceptualized my research design based on previous practice-oriented research. Next, I will discuss my research questions and the data collection methods I developed to help answer those questions. Then, following an outline of my data analysis methods, I will reflect briefly on what I learned about my methods.

TOWARD A METHODLOGY

To develop my research methods, I drew on literature ranging from empirical pedestrian studies to more conceptual texts about how to understand the forms of the city. Broadly, I hoped to study the city of the pedestrian with the precision that traffic engineers study the city of the car (Gehl, 2011). Thus, I founded my research first on the principles of William H. Whyte, exemplified by his documentation of plaza use in New York City and other American downtowns (Whyte, 1980). Whyte studied in great detail how people use various plazas, utilizing time-lapse photography and marking where people sat, stood, or walked through. The Project for Public Places, Inc., founded by Whyte's one-time research assistant, as well as other studies have since built on this work (Johnston, 2013; Neal, 2010; Project for Public Spaces, Inc., 2000; Rahi et al., 2012; Shrestha, 2015).

I also found Kevin Lynch's work insightful (1960), since I chose to focus on people's walking paths. In particular, I drew on a concept that urban designers and landscape architects call a "desire route," essentially an unplanned physical path created by large numbers of people talking the same route (Halbur, 2008; State of Illinois, 1959). The question of scale was also important, as some research has confined itself to walking paths as a very intimate, body-level scale (Sletto & Palmer, 2016), while other research

looked at several blocks or a neighborhood (Agrawal et al., 2008; Clifton, 2013; Handy, 1996). In my case, inspired by Michel de Certeau (2001), I sought to integrate the ground-level experience of standing in and navigating the pedestrian space I wish to study. So, my data collection methods required a precise, ground-level, careful observation of pedestrian paths.

Finally, in developing a framework to analyze my data, I relied on GIS software, which allows me to integrate spatial data with attribute data, represented respectively by the pedestrian paths and some demographic data about the actual pedestrians I am studying. GIS helps to represent "material space," the space of planners, designers, and engineers (Soja, 1996). It also allows me to visualize how people's paths indeed "produce" space; i.e. GIS in conjunction with my field observations helped me answer (1) the spatial questions of *where* and *how* people walk. In addition, I sought to address (2) the demographic question of *who* does the walking, and (3) the conceptual question of *whether or not* people follow engineered paths.

COLLECTING THE DATA

It was a challenge to develop data collection methods to answer these questions. The walking literature largely covered empirical questions of how often people walk and motivations for walking, but I found little research that described the experience of path making. Furthermore, as I tried to supplement my observations, I decided to develop an intercept interview. The challenge, then, became to write interview questions that are both brief and comprehensive.

The scale of my study was also difficult to decide. I eventually decided to divide my study area of the intersection of Rundberg and Lamar into four sectors, one for each corner. The four corners provide discreet units for observation and analysis with

important similarities (namely adjacency and all being part of the wider Rundberg and Lamar area) as well as analytically useful differences (such as the different built forms, density, tree coverage, proximity to transit, and land use). I ultimately developed three data collection methods:

1. Field observations – I spent 16 hours, divided into eight 2-hour blocks, making field observations, shown in Figure 4.1. I used maps that depicted the built environment, including sidewalks, crosswalks, buildings, trees, and parking spaces. I would hand-draw people's paths as I observed them walking, before digitizing these paths in GIS. I also collected basic demographic data as best as I could tell – gender, race, age range, and whether or not the person was using a wheelchair or stroller. At times, one of three undergraduate assistants[1] interested in my research helped by documenting people's paths. This allowed me to conduct intercept interviews.

Monday	**Tuesday**	**Thursday**	**Friday**
10-Oct	**11-Oct**	**13-Oct**	**14-Oct**
5-7 p.m.: Sector 4	5-7 p.m.: Sector 3	5-7 p.m.: Sector 2*	9:30-11:30 a.m.: Sector 1*
	18-Oct	**20-Oct**	**21-Oct**
	9:30-11:30 a.m. Sector 3*	9:30-10:30 a.m.: Sector 4	9:30-11:30 a.m.: Sector 2
	9:30-10:30 a.m. Sector 4		
	5-7 p.m.: Sector 1		

*Aided by undergraduate research assistant

Table 4.1: Field research times and dates

[1] Niku Hansen, Andrew Hill, and Clark Higganbotham volunteered to assist with my research through The University of Texas at Austin's Office of Undergraduate Research, drawing people's paths under my supervision.

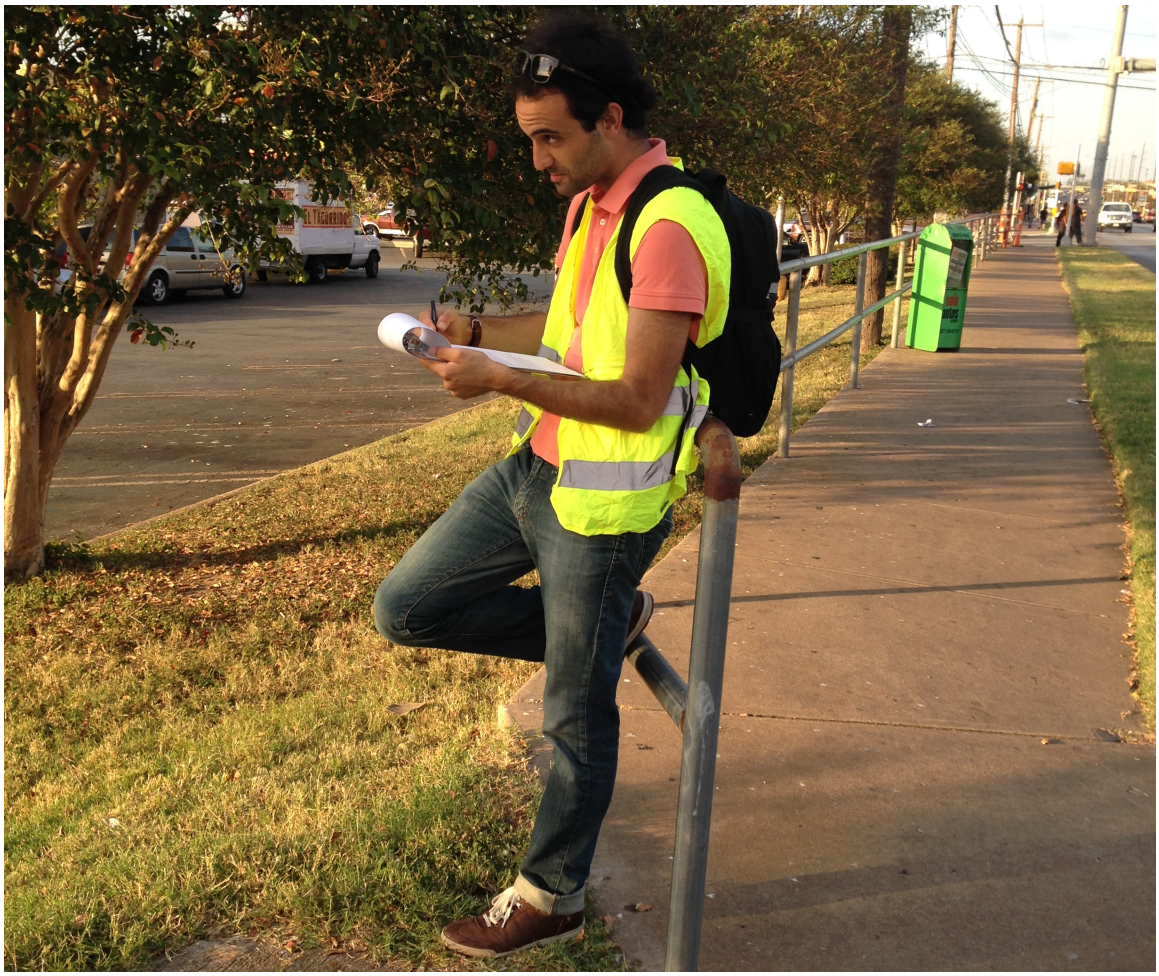

Figure 4.1: Photo of researcher
In this photo, taken by my assistant Niku Hansen, I am drawing paths in Sector 2 during the afternoon rush hour.

2. Intercept interviews – I interviewed 10 people who were walking in the study area. The interviews focused on people's motivations for walking, what encourages people to walk, and what discourages people to walk. I collected the same demographic data as above.
3. Field notes from walking through the study area – I walked through the study area myself, especially along routes that I tended to observe many people using. This was intended to give me a strong, personal understanding of the

feeling of walking in the study area and led to my descriptions of the four sectors in the previous chapter.

Thus, these three methods combined to give an understanding of the walking paths people create by collecting data at the pedestrian's level, by seeking feedback from interviewees, and by documenting the built environment around the walking paths.

Field observations

This section will describe in considerably more detail the methods I used to depict people's walking paths with "precision" (Gehl, 2011). I developed a path mapping tool to document people's walking paths within a 100-200 foot range (see Appendix B). I conducted observations for each sector once during the late morning after rush hour (9:30 to 11:30 a.m.) and once during the afternoon rush hour (5 to 7 p.m.). This eliminated observations during the nighttime when people's walking routes could be quite different, but accommodated two considerably different types of walking: rush-hour and non-rush-hour walking.

I used these maps to draw five paths per page, each in a different color with pen. I then wrote on the back of the map a code for the demographic information of the person whose path I was depicting. I used the same colored pen to draw a path and the path walker's demographic information. Appendix A shows the observation protocol my assistants and I used. People walking in a group were represented with one colored line and then each person's demographic code was noted on the back. So, a sheet with five paths drawn on it could be depicting the paths of more than five people, since one line could represent multiple people. This allowed for a more efficient documentation of paths. In my mapping of people's paths, I was not walking immediately next to them so it was not possible to document every micro-movement. I did, however, map broader

aspects of their path – did the person walk on the concrete sidewalk or on the grass? Did the person cross the parking spaces or stick to the driving area of the parking lot? Did the person cross the street in a crosswalk or not or both? How much did the person cut across the parking lot to shorten his or her route? Did the person go some other way that made the route longer than just a straight line from point to point? Using a basemap that included elements of the environment, including trees, the sidewalk, and roadside dirt/grass, I was able to map people's movements with sufficient detail to answer such questions.

Intercept interviews

The intercept interviews were meant to be short, providing general insight into pedestrians' motivations to complement the mapping process. I interviewed pedestrians during periods when my research assistant aided with the path tracing. The interviews ranged from a very detailed one with a gregarious homeless man to very short ones with pedestrians providing mostly one-word answers. I found the interviews to be richer when conducted while walking through the space, allowing the person to be more reflective of her or his walking experience in the moment. The interview questions, shown in Appendix A, began by identifying common destinations and walking frequency, then shifted into more qualitative questions aimed at understanding where the person does or does not walk and why. The interviews concluded with a question about what improvements the person would suggest.

Field notes

In order to provide an understanding of how the Rundberg and Lamar area feels for the walker, it was necessary to walk through the study area with a critical eye. After taking some time to study people's paths, I walked through the study area with an eye

toward what a pedestrian would sense – see, feel, hear, smell, and even taste. These descriptions helped to better make sense of where people are walking.

ANALYZING THE DATA

Once my data was collected in October 2016, I input the paths and their attribute data into ArcGIS. Each sector was split into morning and afternoon observations and a GIS shapefile was made for each observation time. I then combined the shapefiles into a single one for all observations to visualize both at the sector scale and study area scale. The attribute data could also be exported into a spreadsheet for demographic analysis by sector.

This GIS analysis relied on the Getis-Ord Gi* statistic of a particular feature in a dataset (ESRI, n.d.). This is done by looking at each feature within the context of its nearby features. So if it is looking at a path by a person who I marked as Asian (the feature Asian would be a value of 1), the tool will look at the paths nearby and whether they are also used by people who are Asian (1) or not (0). If it is surrounded by other paths with this feature value, it will be a hot spot. It does this by calculating the "local sum" for that feature and comparing it to the "expected sum" for the whole dataset. So, in this example, if there are far more paths by Asian people than would be explained by statistical chance, we get a hotspot. Key hotspots I found indicate there are areas where paths tend to be gendered, racialized, and attract people of certain ages.

The analysis method for the interviews was to take on a simple qualitative analysis of interviews, highlighting common themes and coding the interviews. This could tell me what sorts of answers were common among interviewees. While the sample of 10 people is too small to make broad conclusions about these interviewees, it was my

hope that they could better inform my research and perhaps lay the foundation for future work into people's motivations and feelings of walking in the area.

STUDY LIMITATIONS

There were several limitations to my research, including the limited time I had to spend studying the area. Ultimately, I studied each corner of the intersection for four hours: two hours in the late morning and two hours in the afternoon rush hour. This eliminated observations during weekends and at night, which I believe would be significantly different from those on working days and in daylight. I also performed my study in mid-October, which is typically a time of pleasant weather in Austin. As such it offers a sort of "best case" of when people would want to be outside. Indeed, during my study, I almost always had sunny and warm weather, with rain coming once for less than one hour of an observation time.

Another limitation is that, as a single observer, I was not able to follow the path of every person who came through the study area. For example, when a bus would stop and six people would disembark, I could not draw each person's path. Instead, I attempted to pick people to watch at random, trying not to introduce some sort of bias of, for example, not following the paths of the elderly, the young, or the disabled. I cannot say I was free of any sort of bias, but I did my best to not "pick" because of the person's physical characteristics.

Another limitation relates to my approach to note the person's social demographics: age group, gender, and race. While gender was generally easy to determine, age group (0-11, 12-14, 15-29, 30-59, 60+) and race (Asian, Hispanic, Black, White, or other) were rather difficult. For one, I did not ask each person their age or race but instead noted my best determination from their physical appearance. To allow for

comparison with US Census data, I used their five-part racial categories, which can be particularly limiting in an area with many different kinds of "Asian" people. That category included, in my study, people from locations as distinct as the Middle East, Nepal, and Vietnam. Nonetheless, I offer this demographic data in my study as a rough way to categorize the types of people using spaces.

METHODOLOGICAL CONCLUSIONS

In reflecting on my methods, they were helpful for my study purposes. The field observations generated 540 walking paths, albeit with rather imperfect demographic data based on my own observations. The interviews were insightful, but more respondents and more questions would have made them more meaningful. Conducting walking interviews was helpful, but it could have been done more often. The observations of the environments of the sectors were also useful to fill out the rather quantitative data from the field observations, allowing me to contextualize the places where I was seeing people walk. In the following chapter, I describe in detail what my research revealed.

Chapter 5: Findings and Analysis

This chapter will explain my study's findings and provide a brief analysis. One principal finding that emerged from the research is the distinction between a "path" and a "route." A route is constructed by many, many people walking in the same place over time; i.e. a route is the result of an agglomeration of paths. Figure 5.1 shows the routes found in my study area in dark grey with the lighter lines representing individual paths. Darker areas are those where more paths accumulated. These lines are merely an approximate representation and not based on a statistically rigorous analysis like the Getis-Ord Gi* hotspot analysis I will use elsewhere in this chapter. However, I identified these routes through a careful visual analysis of all 540 paths I observed.

Second, I considered what sorts of obstacles, or lack thereof, existed in the walking environment. For example, the "route" I determined to exist in Sector 3 just north of the gas station along the concrete barrier had a far lower agglomeration of paths than, say, the grid of routes in the HEB parking lot. However, I needed to consider the parked cars that constrain the walking path in the HEB lot compared with the small barrier of a concrete curb and no other naturally bounding objects to squish people into a tight space. Therefore, to find the route through the gas station, I needed to widen my scope to see more paths that were a bit farther apart but nonetheless forming a distinct route.

Beyond the designation of routes, one other key finding is that different types of people tend to walk in different places, in some cases creating statistical hotspots and coldspots. And finally, my research found patterns in people's paths beyond the fact that

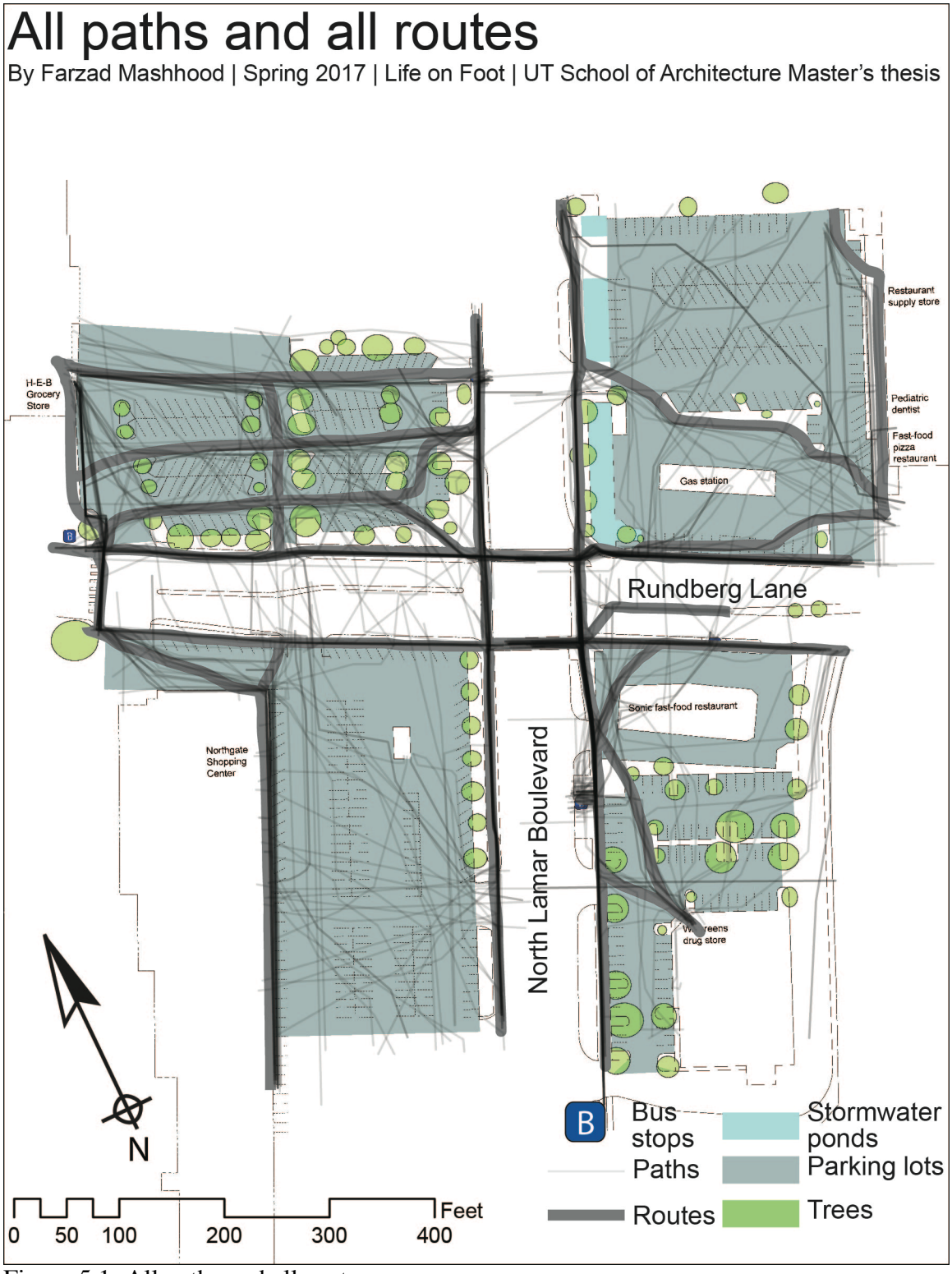

Figure 5.1: All paths and all routes

they are producing routes: some people's paths tend to link to certain destinations, while other areas tend to be used primarily for passing through.

Following this introduction, the chapter will discuss in more detail the concept of routes, and then explain more about the four kinds of routes I found. Then, I will present some overall findings of *whom* I observed and how that compares to U.S. Census data from the nearby neighborhood. Finally, I will present the different findings I had about paths by each sector.

CONCEPTUALIZING TYPOLOGIES OF ROUTES

It is not surprising that people's paths agglomerate; that is, it's obvious that people would tend to walk more in certain areas, especially along sidewalks. The point of my research was to map any informal, everyday routes that might exist beyond "engineered" routes such as sidewalks and crosswalks. This chapter will first describe the four different kinds of routes I found in the study area, which I will refer to as engineered routes, gridded routes, shortcuts, and avoidance routes. Next, I will present findings by sector, as that was the scale at which I conducted my research. For example, because I collected data on the paths people created within each sector separately, I cannot say whether a single path that started near the Walgreens in Sector 4 continued through to the HEB in Sector 1. Additionally the sectors each have distinct built environments: analyzing them separately helps us say something about path making in different kinds of environments, such as a parking lot without trees or a sector with a popular grocery store. Also, it is necessary to present demographic findings at the scale of the sector to give a

closer picture of who I found walking; these smaller-scale demographics will help us to see similarities and differences among the four sectors of my study area.

Engineered routes

I am referring to as "engineered" those routes which follow some sort of walking route traversing the city's public rights of way, specifically sidewalks and crosswalks. I call them engineered because they had to be put in place through the work of transportation engineers who design city streets and their accompanying sidewalks and crosswalks. These routes are built not necessarily with knowledge about the most useful or pleasant walking route, but instead they are based on ordinance or what is most "practical," for example the city's limited right-of-way, or a straightaway to accommodate wheelchairs. The result is a clear grid of engineered routes that closely follows the street pattern. However, people who use the engineered routes frequently deviate from them: I found that only 157 of the 540 paths, or 29%, stayed entirely on these "engineered" routes. Demographically, the people represented in the 157 paths that entirely followed the engineered route were similar to the overall demographics of my study sample.

Gridded routes

My research found a set of routes that follow a gridding pattern that is different than the grid of "engineered" routes that follow the street. There is a particularly obvious grid of routes in the HEB parking lot in Sector 1. These routes, which follow the driving routes of parking lot, have a great deal of pedestrian traffic, but people tend to use the

grid in various ways. Some people use a step-wise pattern in the grid, going up for a bit, then right, then up, then right until reaching their destination. Others will go straight until the route they are taking ends and then make a 90-degree turn to use another leg. What is most interesting about this type of route is that it defies the conventional wisdom that people walk the shortest distance from one point to another. Quite on the contrary, what my research showed is that people will make routes that seem to not be a direct route from one point to another but rather follow a more defined grid to get to their destination.

Shortcuts

A number of routes that emerged from my research are what I call "shortcuts." Unlike "gridded" routes, "shortcuts" take a diagonal form to shorten another existent route or to connect other routes or destinations. These tend to follow what designers have termed "desire paths," (Halbur, 2008) often paths beaten into dirt or grass signifying places where many people have walked. Two desire paths that are represented among my shortcut routes are in the grass between Rundberg and the southeastern corner of the HEB parking lot and in the grass between the Sonic lot and Walgreens parking lot. Other shortcuts include the route north of the gas station along the concrete barrier and the southeast corner of Lamar and Rundberg through the Sonic lot. One of the corners being cut, the Sonic lot in Sector 4, is a very clear corner that is being snipped by about 45 feet, while the other corner cut by the gas station is a more circuitous route. While the Sonic corner cut is a simple hypotenuse of a right triangle, reducing an approximately 145 foot route to only 100 feet, a 31 percent reduction, the gas station corner cut is reducing a 440 foot engineered sidewalk route to 365 feet, still shorter but only a 17 percent reduction.

Avoidance routes

"Avoidance routes" seem to form when walkers on "engineered" routes wish to avoid something. They differ from shortcuts because they are longer, rather than shorter, than engineered routes. An example is the avoidance route along the southern edge of the gas station in Sector 3. Here, people are walking along the edge of the parking lot instead of on the sidewalk, which is just a couple feet, and in some cases inches, away. Later, people following this avoidance route connect with the sidewalk. One clear example of this occurred when a young woman with a child stepped into the gas station lot shortly before reaching a seemingly homeless man sitting on the ledge facing the sidewalk. After passing the man, the young woman and child stepped back down onto the sidewalk.

WHOM I OBSERVED WALKING

Next, this chapter will present some key demographic findings about the people I observed and interviewed in my study. It is important to know whom I observed in my observations and compare that to neighborhood data in order to understand how representative my research is. For example, there were nearly twice as many men as women in my observations, a 66-34 split. This compares with a roughly 50-50 split in the US and a 57-43 split in the five census block groups within a quarter mile of the Rundberg and Lamar intersection. In other words, it may be that my study is over-representing the walking experience of men, or that men simply *do* walk more in this area. Higher rates of men seen walking may be because men feel safer walking in the area or that men are out of their home and thus on the streets more. Table 5.1 below presents the overall summary data from my path-tracing sample. My path-tracing sample

is also older, more white and black, and far less Hispanic than the nearby Census Block Groups. Table 5.2 below compares the demographics of my 540 path sample with the nearby Census Block Groups (18.06-1, 18.19-1, 18.19-2, 18.22-1, and 18.23-3).

	Total	Sector 1	Sector 2	Sector 3	Sector 4
Men	**65.7%**	64.0%	61.7%	68.4%	68.8%
Women	**34.3%**	36.0%	38.3%	31.6%	31.2%
Child (0-11)	**5.7%**	4.5%	2.8%	12.0%	4.3%
Youth (12-14)	**4.8%**	2.8%	4.7%	0.9%	10.9%
Young adult (15-29)	**28.5%**	25.3%	29.9%	32.5%	28.3%
Adult (30-59)	**43.5%**	47.2%	43.0%	45.3%	37.7%
Senior (60+)	**17.4%**	20.2%	19.6%	9.4%	18.8%
White	**25.7%**	29.8%	17.8%	21.4%	30.4%
Black	**27.8%**	30.3%	27.1%	28.2%	24.6%
Hispanic	**37.0%**	37.6%	46.7%	37.6%	28.3%
Asian	**9.4%**	2.2%	8.4%	12.8%	16.7%
Walking in a group	**34.8%**	34.8%	29.0%	47.0%	29.0%
Walking alone	**65.2%**	65.2%	71.0%	53.0%	71.0%
Wheelchair	**2.6%**	1.7%	2.8%	1.7%	4.3%
No wheelchair	**97.4%**	98.3%	97.2%	98.3%	95.7%
Stroller	**0.7%**	0.0%	0.9%	1.7%	0.7%
No stroller	**99.3%**	100.0%	99.1%	98.3%	99.3%
TOTAL	**540**	**178**	**107**	**117**	**138**

Table 5.1: Summary of demographics from path tracing sample

In my brief intercept surveys, I spoke with 10 adults. Almost all interview subjects (eight) were walking alone, while none were on wheelchairs. One young mother was walking with two small children, one of whom was in a stroller. For comparison, I analyzed 5-year ACS data from Census Block Groups within ¼ mile of the Rundberg and Lamar intersection. Table 5.2 shows how the interviewees compare demographically with neighborhood ACS data. My study has other interesting demographic findings for each sector that will be discussed later when this chapter presents sector-by-sector findings.

	Survey sample	Path tracing sample	Block groups
0-14	--	11%	24%
15-29	--	29%	31%
18-29	30%	--	28%
30-59	20%	44%	40%
60+	50%	17%	5%
Male	60%	66%	57%
Female	40%	34%	43%
White non-Hispanic	40%	26%	13%
Hispanic	20%	37%	73%
Black	30%	28%	8%
Asian	10%	9%	5%
Other	0%	0%	1%

Table 5.2: Comparing demographics from interviews, path-tracing, and Census blocks groups 18.06-1, 18.19-1, 18.19-2, 18.22-1, and 18.23-3

SECTOR-BY-SECTOR ANALYSIS

Now, we return to my specific findings about the different paths people make, focusing on the qualities of individual paths other than the routes they create. Some paths that start or end in the study area, others only pass through a sector, and some stitch together two spaces. This way to look at paths needs a different analysis than what led me to identify routes: it requires considering *how* they move through space, rather than *where* they go. I do this through a sector-by-sector analysis, first describing my research findings by type of person, then by type of path. I will describe the "hotspots" that are gendered, racialized, and attract certain ages; destinations that tend to draw people; and places where people tend to only pass through. This analysis, as indicated above and in Chapter 4, relied on the Getis-Ord GI* statistic.

Figure 5.2: Sector 1 paths and routes

Sector 1

In Sector 1, with Figure 5.2 showing its full range of paths and routes, my research found interesting results related to gender, age, and race. This area is a hotspot for women, is more popular among older people, and is an unlikely place to find Asian people. The hotspot for women is to the west of the study area, connecting Rundberg Lane north into HEB. This sector is also where the second-highest proportion of women was found; they were concentrated along the west, shown in Figure 5.4. This sector is more popular among middle-aged (31-59) and older (60+) adults, as the parking lot is a hotspot for both groups. Proportionally, 67.4% of the people I observed seem to be 31 or older, compared to 60.9% overall. This sector is the least likely to find Asian people in (see Figure 5.3), and is an unlikely place for Asian people to cluster. Figure 5.5 shows that the parking lot is a "cold spot" for Asian people, meaning there is a statistically significant absence of Asian people walking here.

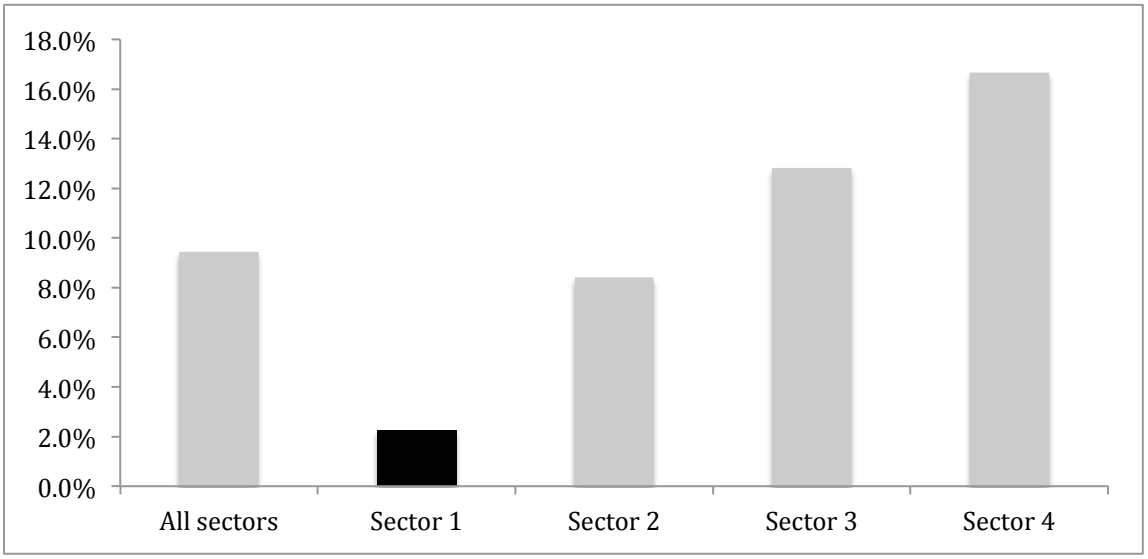

Figure 5.3: Share of Asian people by sector

Figure 5.4: Map of hotspot of women

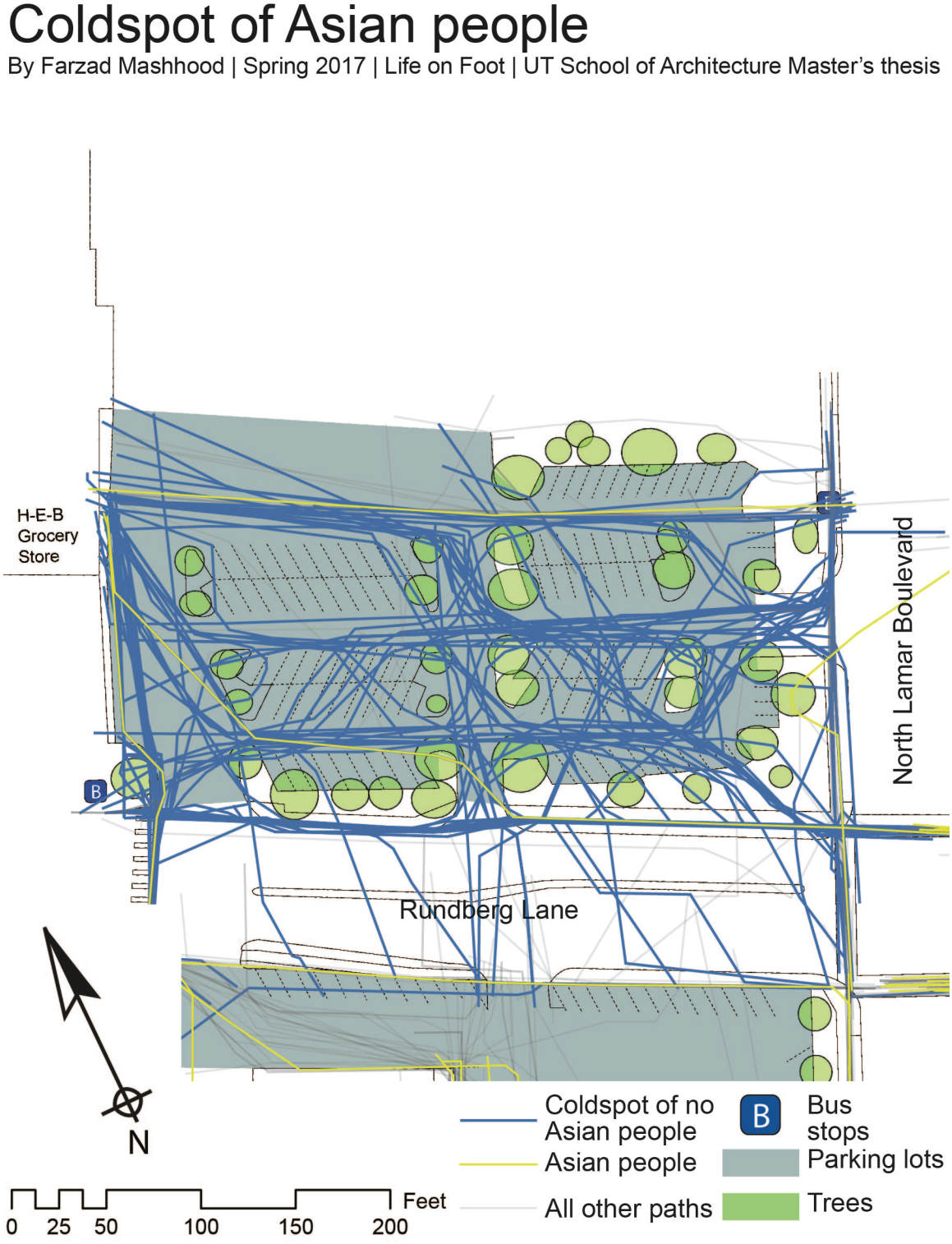

Figure 5.5: Map of coldspot of Asian people

Many paths in this sector start or end at HEB (I did not distinguish between starts and ends in my data collection): half of the people walking here (89 of 178) went to or came from HEB. This does not include many people coming in and out of the HEB who appeared to be going to cars and surely represents an undercounting. It may not come as a surprise, but eight out of 10 of my interviewees also said HEB is a regular destination. Another common destination was the bus stop on the southbound side of North Lamar: 39 paths, or 22% came from or went to the stop. As mentioned above, this sector has a distinct type of route I am calling "gridded" routes through the HEB parking lot. Somebody heading from the bus stop on Lamar to the bus stop on Rundberg or from the HEB to the corner of Lamar and Rundberg, for example, could take a variety of routes of similar distance and through similar environments (a moderately tree-lined parking lot). And, my research shows, people do tend to take a variety of such routes, creating a grid of routes. It is far less common for people to cross between parking spots, and when it does happen, it does not form a clear "route."

Removing from this sector the paths of people who went to either of the two main destinations – HEB and the bus stop – I come up with some 40 paths that are "passing through" this sector. Demographically, the people who tend to pass through do not differ much from people who tend to go to the bus or HEB, unless they are Hispanic or Black. As Figure 5.6 shows, Black people are more likely to go the HEB or the bus stop than they are to pass through, while Hispanic people are more likely to pass through than to go one of the two chief destinations.

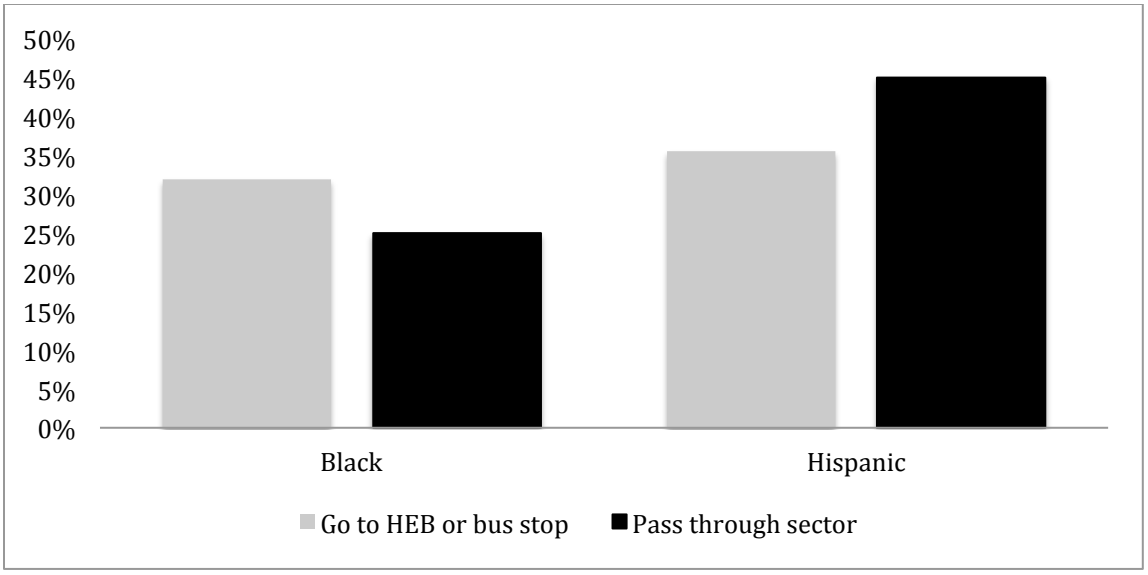

Figure 5.6: Race and destinations

Another path common in Sector 1 was crossing Rundberg Lane, which accounts for 90 of the paths, a slight majority. At the midblock crosswalk were 43 of my paths, or 24% of the total. Crossing where there is no formal crosswalk were 20 of the paths, or 11%. Crossing Rundberg at the Lamar intersection were 30 people, or 17% of the paths. There were some overlapping paths – people who both crossed at the crosswalk but then walked significantly outside the crosswalk – explaining why those three numbers add up to more than 90.

Sector 2

This sector is the most diverse in terms of the type of people I observed, and it has the highest proportion of nonwhite people walking, as seen in Figure 5.8. (Figure 5.7 shows all of the sector's paths and routes.) Moreover, this area has a statistically significantly higher concentration of paths by people whose race did not appear to the white, non-Hispanic, shown in Figure 5.9. I am dubbing this sector the

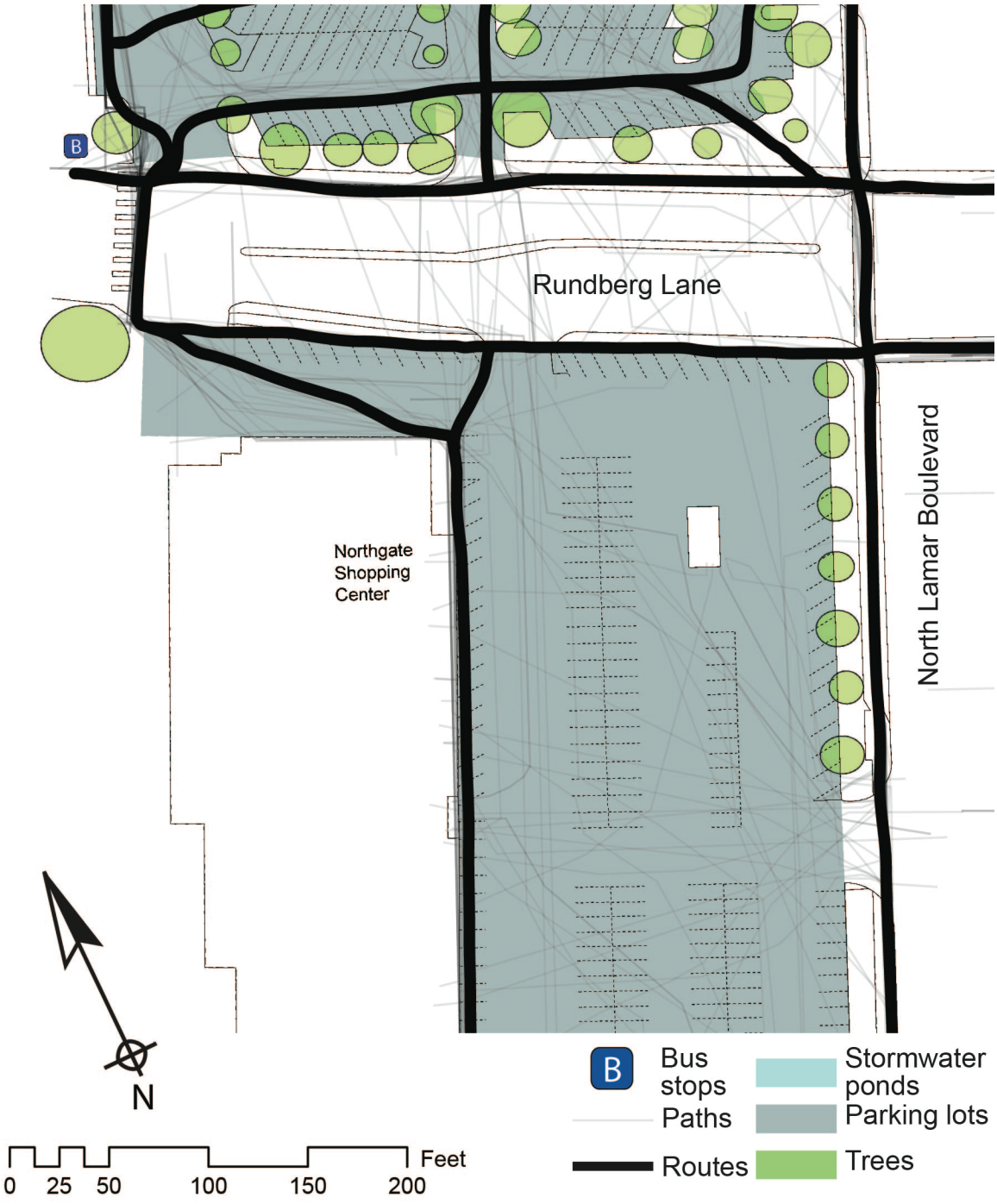

Figure 5.7: Sector 2 paths and routes

"multicultural shopping center" since it is the location of the shopping center with the pawnshop, auto shop, taco stand, Indian/Pakistani restaurant, Mexican grocery store, Latino clothing shop, Chinese restaurant, Salvadorian restaurant, Halal grocery store, and cell phone store that advertises low rates for making international calls. It also connects to an apartment complex I know to have a substantial refugee population.

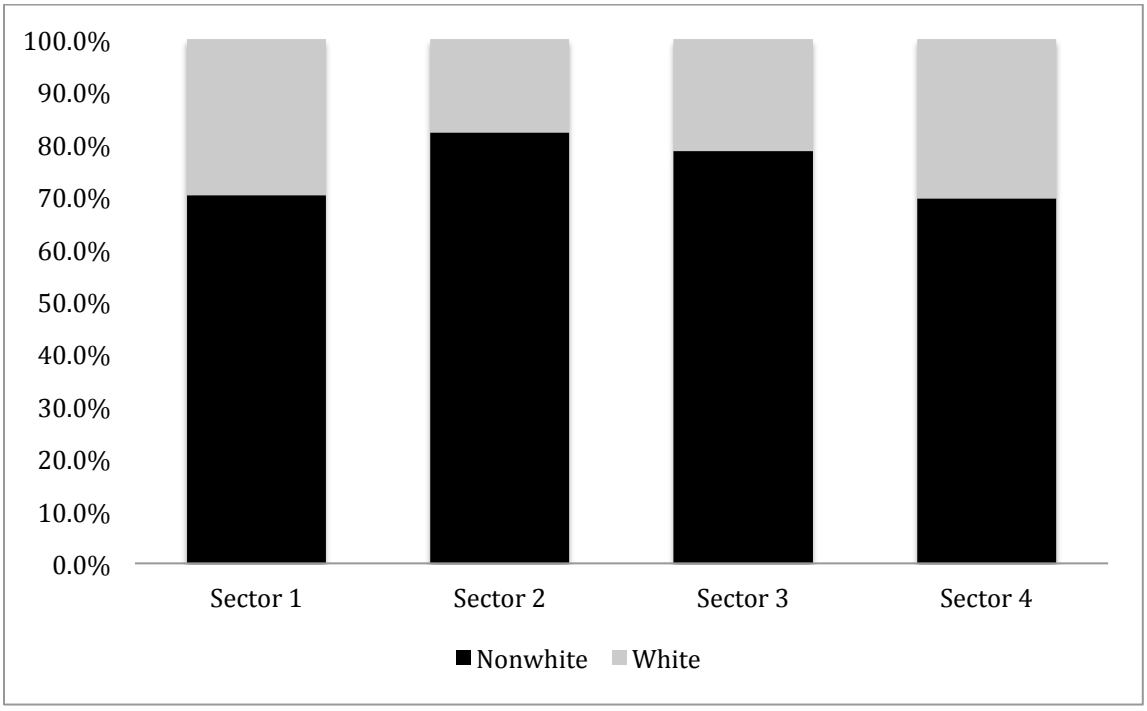

Figure 5.8: White and nonwhite population shares by sector

This sector has the highest rate of walking alone, 71.0% (the same as in Sector 4), compared to the overall rate of 65.2%. Figure 5.10 shows the significant differences between those walking in groups and those walking alone, including the substantial share of women among the group walkers. Men outnumbered women 3 to 2 in this sector (and 2 to 1 in the study area overall), but for group walkers I found the opposite: women

Figure 5.9: Hotspot of nonwhite walkers

outnumbered men 3 to 2. This formed a hotspot in the area along the storefronts in the shopping center. In the whole sector, 38.3% of the paths are women's, compared to 34.3% in my whole study area.

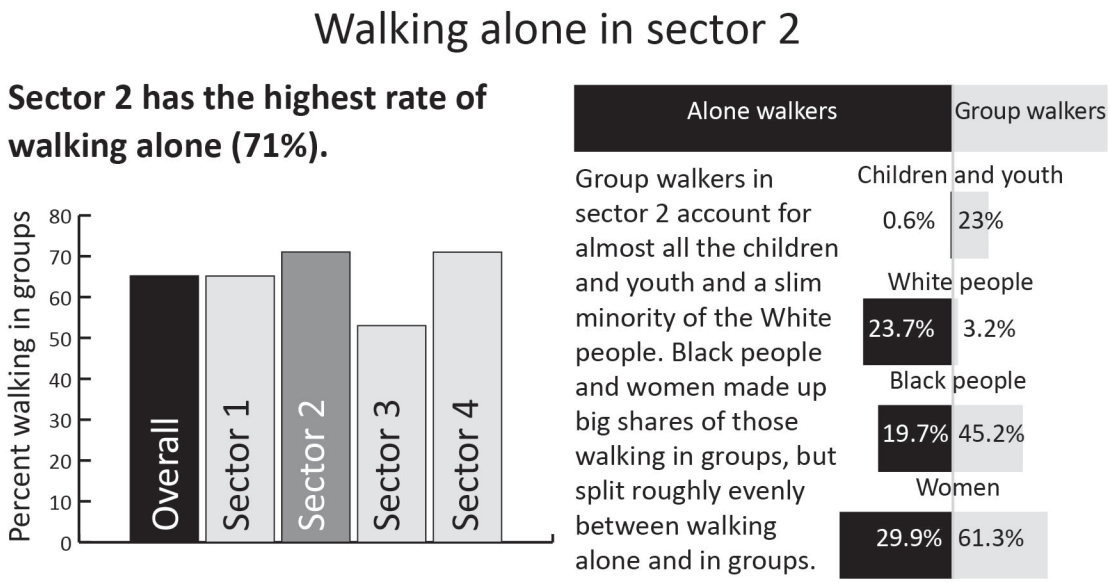

Figure 5.10: Walking alone in Sector 2

Safety was a concern to some of my interviewees. Two women I interviewed brought up the group of homeless people who sit along the Little Walnut Creek Library. These women both said the people there are often on drugs. One woman said their catcalling and other "rude" statements made walking there undesirable. Another woman, a mother of two young children, said she felt particularly vulnerable when walking there with her children. When she needs to use the bus stop near the library, she sits as far away as possible from the nearby "prostitutes and people doing drugs and fighting."

Next, the types of paths in this sector tend to be paths that pass through. Of the 102 paths recorded here, only 30 of them have a destination in the study area. The

majority, 72, passed through the space. That indicates this area is one of transit for pedestrians. Furthermore, those passing through were different from those with a destination in some significant ways, namely in gender and whether they walk in groups. As seen in Figure 5.11, men represented a higher share of those with destinations than those who passed through; also, those with destinations were less likely to walk with others than those who passed through.

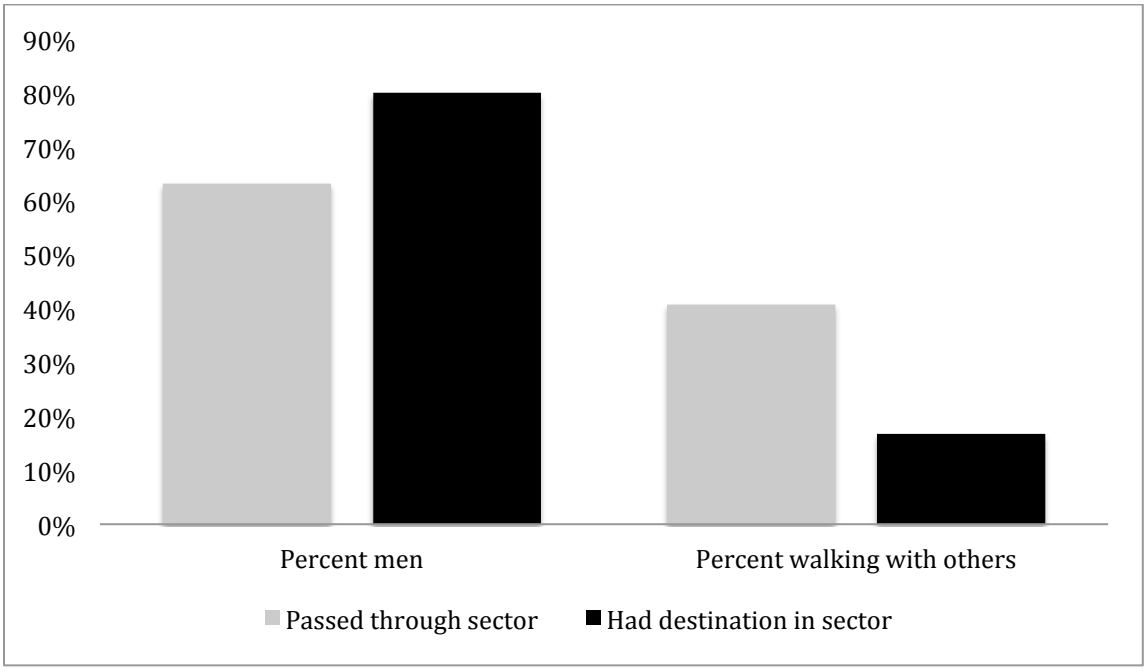

Figure 5.11: People passing through versus those with a destination by gender and group status

Another pattern that appears in this sector is a "stitching" pattern of paths that cross each other in various ways between the walkway in front of the shopping center and North Lamar Boulevard, shown in Figure 5.12. This stitching pattern seems to create a space where people walking either along the shopping center or on Lamar want to

connect. Thirteen people walked both along North Lamar and along the shopping center, representing 25% of those who walked along North Lamar and 22% of those walking in front of the shopping center. That means about one out of every four people walking along this section of North Lamar also walked along the shopping center's storefronts, and about one of every four people walking along the shopping center's storefronts also walked along North Lamar. Related to this "stitching" pattern are the parallel north-south routes along the walkway in front of the shopping center and North Lamar Boulevard. As mentioned above, 13 people walk on *both* the shopping center walkway and the North Lamar sidewalk. This was out of 59 who used the shopping center walkway and 52 who used North Lamar at some point on their path. As one interviewee explained, she and her husband walk along the front of the shopping center because it is a shorter route between their apartment complex (just south of the shopping center) and the HEB (just north of the shopping center).

There may be, as I suggested above, an avoidance route along the front of the shops as people may be walking there to avoid walking on Lamar, as seen by their paths tending to later connect with Lamar. Anecdotally, I have heard from some young woman friends of mine that they prefer to walk along these shops rather than on Lamar's sidewalk because they feel more comfortable and protected from leering eyes of men driving and walking along Lamar. One interviewee said that this is one of her preferred routes to walk along in part because of the physical beauty: "There are pretty Mexican-style tiles on the ground. They're a little cracked and broken, but it looks like it used to be pretty." In general, however, this sector has few clear routes. Apart from the well-worn

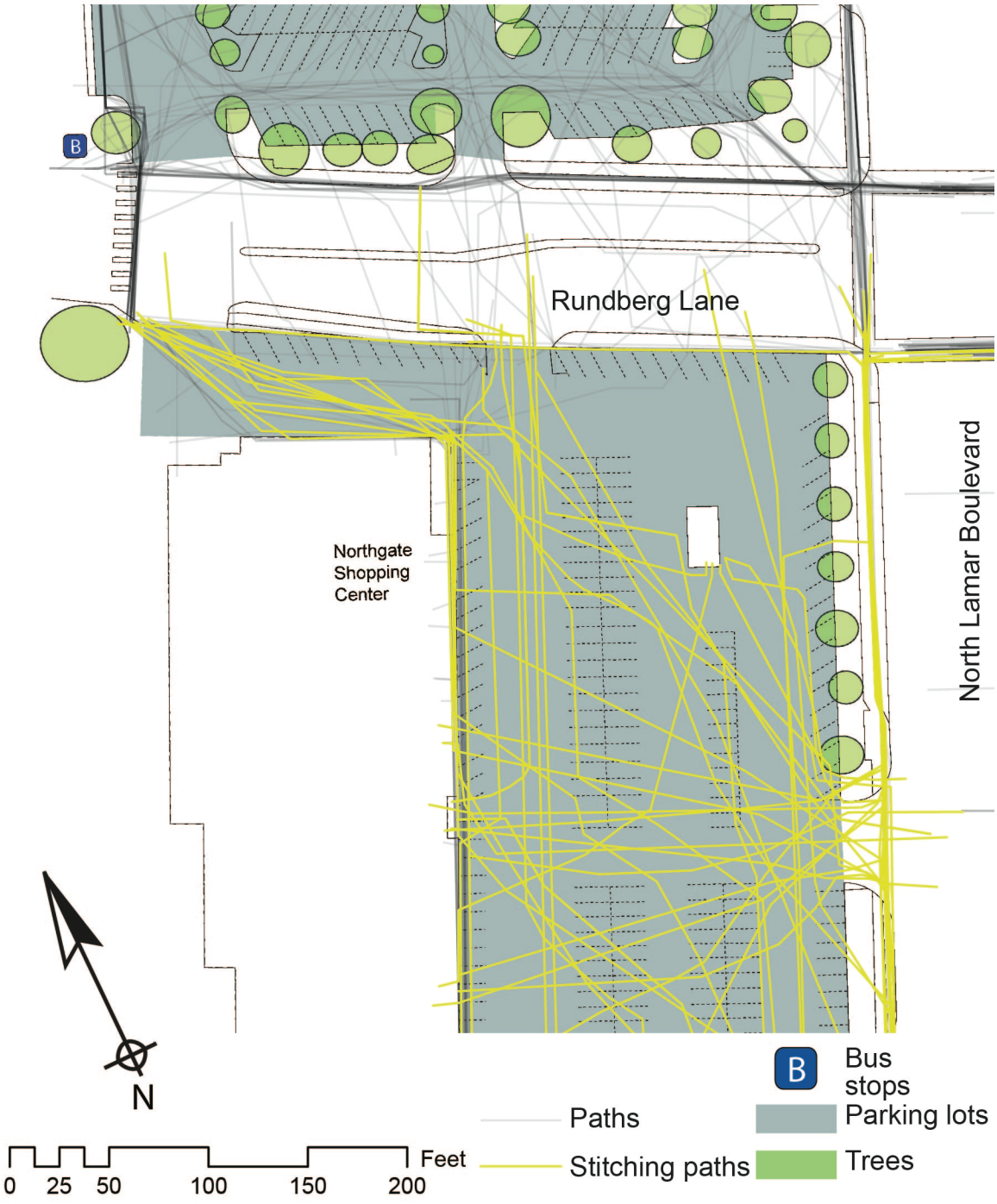

Figure 5.12: Sector 2 stitching paths

routes connecting the north end of the shopping center walkway to Rundberg Lane, the paths across this sector's vast parking lot do not create a clear pattern.

Sector 3

An interesting, although intuitive demographic finding emerged in this sector (the full set of paths and routes are shown in Figure 5.13). This sector had both the highest proportion of children aged 0-11 and the highest proportion of strollers, shown in Figure 5.14. The sidewalk south of the gas station along Rundberg is one of the hotspots of paths by strollers as well as for young children. One may assume that the relatively high rate of children and strollers would lead to a higher rate of women, but that was not the case as this sector had a lower ratio of women than the overall population in the study area (31.6% versus 34.3%). This sector includes a pediatric dentist, which may explain the higher rate of children. Interestingly, every single one of the 14 children found in this sector walked in a group. The sector's racial makeup was also very different for children, as shown in Table 5.3.

This sector's Hispanic and Black proportions were similar to the overall study area, but Asians were slightly overrepresented and Whites slightly underrepresented. The 21.4% of White people compares to 25.7% overall and the 12.8% of Asians compares to 9.4% overall, shown in Table 5.1. Additionally, this sector had hotspots for paths by Black people, particularly passing through the parking lots and just north of the gas station. The hotspot for children and strollers, i.e. the sidewalk along Rundberg just south of the gas station, is, interestingly, also a hotspot for nonwhite people.

Sector 3 paths and routes

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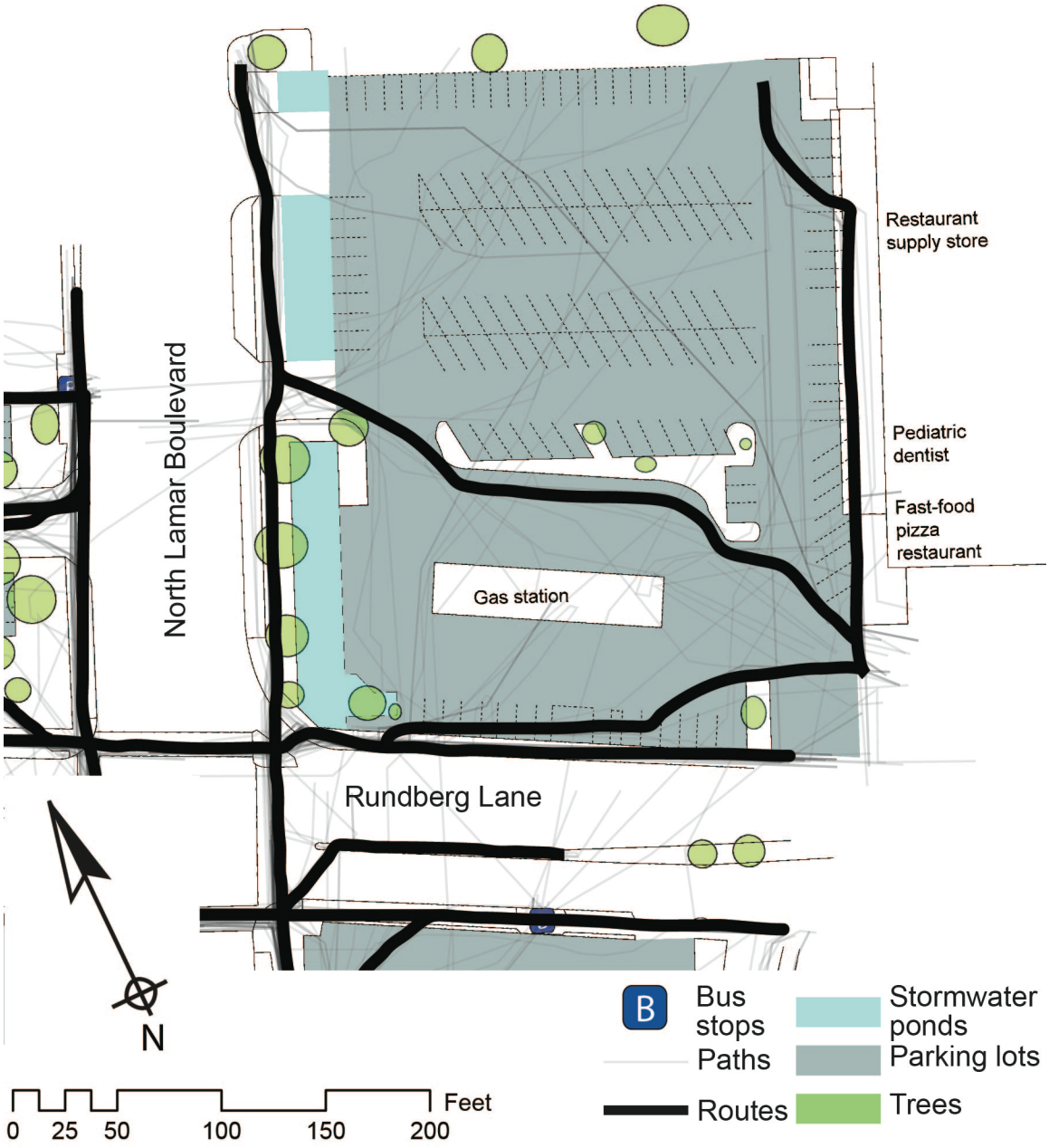


Figure 5.13: Sector 3 paths and routes

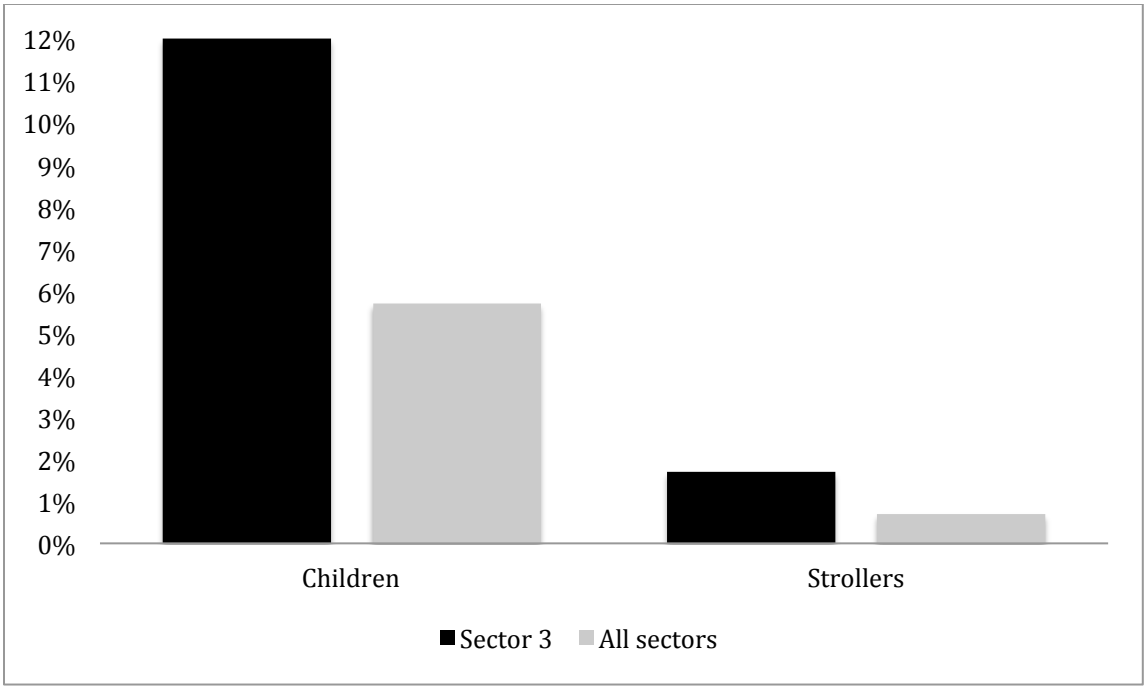


Figure 5.14: Children and strollers more likely in Sector 3

	Children	All ages
White	0%	21%
Black	21%	38%
Hispanic	50%	28%
Asian	29%	13%

Table 5.3: Racial makeup of children versus all people in Sector 3

Finally, this sector has, by a substantial margin, the highest proportion of people walking in groups, shown in Figure 5.15. In fact, the next highest proportion of people walking in groups is in Sector 1, only 34.8%. Again it may be helpful to consider the high ratio of children in this sector, all of whom walked in groups. Indeed, I found that those walking alone are more likely men, older, and White or Black, as shown in Figure 5.16.

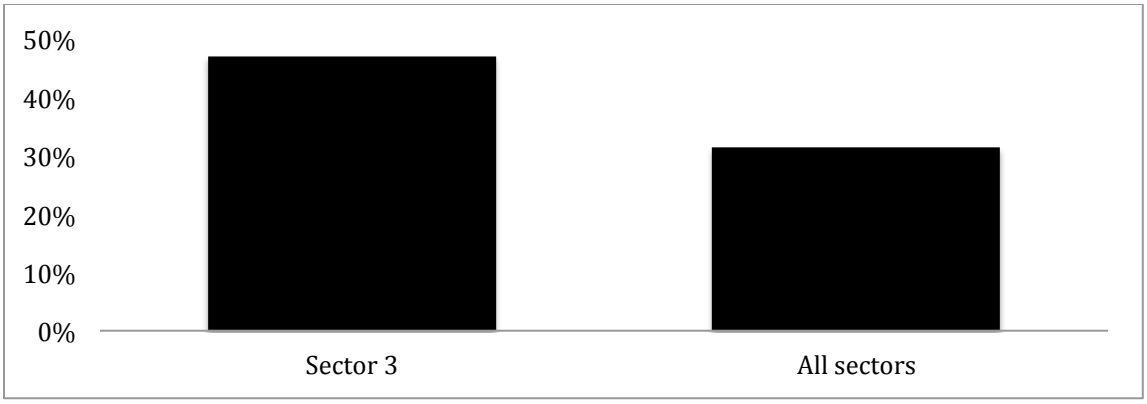


Figure 5.15: Share of people walking in groups

Next, looking now at the types of paths, this sector has few with a destination. There is the HEB gas station and a shopping center with a few stores: a restaurant supply store, a pizza shop, and a pediatric dentist. The gas station is most obviously a car-oriented business, while the others also did not seem to attract many pedestrians either. This is also a sector with a built form that is largely tall, imposing warehouse-style buildings. I found that of the 116 paths in this sector, only 14 (12.1%) had a destination. This is an over-estimate because I am assuming everyone who passed through the HEB gas station stopped there as a destination, which may not always have been the case. Since the vast majority of paths were people passing through, there were not many clear "routes" in this sector. There were the obvious ones along the North Lamar and Rundberg sidewalks. The other routes in this sector were not as clear as, say the HEB parking lot's grid or the desire paths cut into the grass. There was one route going from the southernmost driveway along North Lamar Boulevard, along the concrete barrier separating the HEB gas station from the parking lot. This, I believe, may be a "shortcut" route, shortening the corner connecting Lamar and Rundberg. This route may also seem

safer from being hit by a car, as one of my interviewees explained: “I walked here (rather than on the sidewalk) so I could put my guard down.” Another route was going north-south along the shops. Finally, a less clear avoidance route ran parallel to Rundberg along the slightly elevated edge of the HEB gas station nearest the sidewalk. Of the 60 paths that went along the sidewalk, 24 of them at some point used this higher route to avoid the sidewalk.

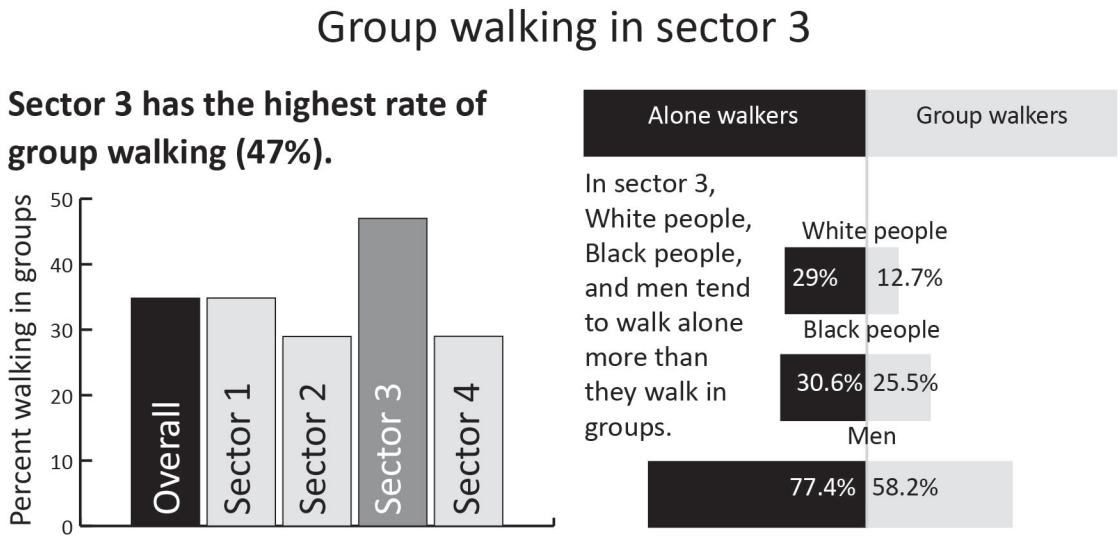


Figure 5.16: Group walking in Sector 3

Sector 4

Finally, we look to Sector 4, shown with its paths and routes in Figure 5.17. Regarding the type of people I observed, this sector has the biggest hotspot of paths for men, as shown in Figure 5.18. It also has a high rate of wheelchair use, White and Asian walkers, and people walking alone. This sector also was a more likely place for young people, who tended to walk in groups. The hotspot of men was from the bus stop on North Lamar, mostly going north to Rundberg, both along the sidewalk and cutting

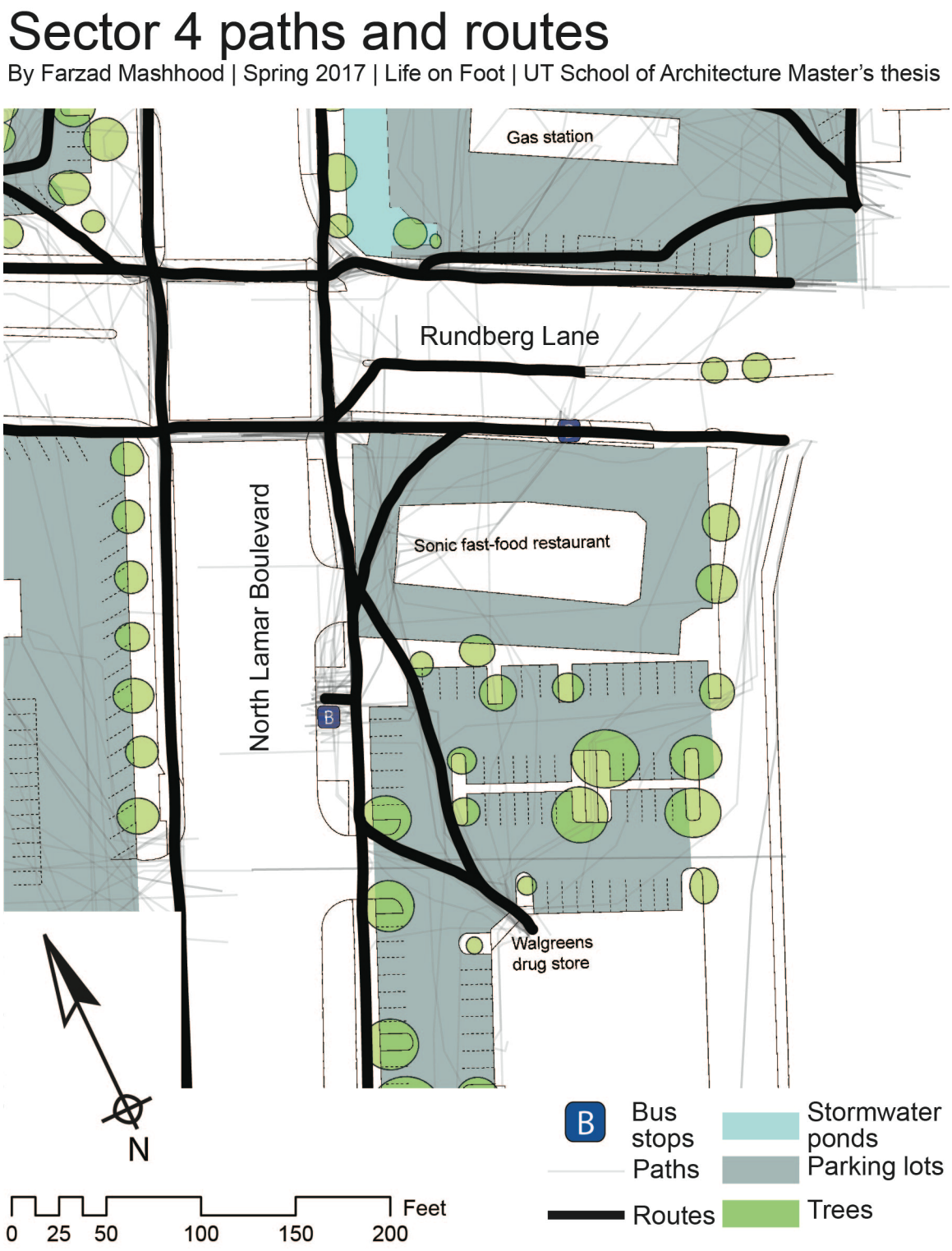


Figure 5.17: Sector 4 paths and routes

through the Sonic lot. The fact that there is a hotspot of men in this sector corresponds with the sector having the highest proportion of men of all the sectors – 68.8% compared to 65.7% overall. Also, 4.3% of the paths were by people in wheelchairs, compared to 2.6% overall. Of those six people traveling by wheelchair, only one was using the bus, while the rest were traveling throughout the sector in no clear pattern. Racially, this sector had a higher proportion than average of White and Asian people and fewer Black and Hispanic people, shown in Table 5.4.

	Sector 4	Study area
White	30.4%	25.7%
Black	24.6%	27.8%
Hispanic	28.3%	37.0%
Asian	16.7%	9.4%

Table 5.4: Race in Sector 4 and whole study area

Just as in the case of Sector 2, 71.0% percent of the people walking in this sector were walking alone, making it the other sector with the highest such rate. There are some demographic differences between those who walk alone and those who walk in groups, shown in Figure 5.19. For example, almost all children and youth walk in groups and a larger share of those walking in groups are women, while black and Hispanic people tend to make up a larger share of lonesome walkers than group walkers. Finally, this sector had a higher proportion of youth and kids along with a lower proportion of adults (aged 16 and older). These children and youth made up 15.2% of the sector's walkers, compared to 10.6% in the whole study area. As noted above, these young people were substantially more represented among the small number of people walking in groups.

Figure 5.18: Sector 4 hotspot of men

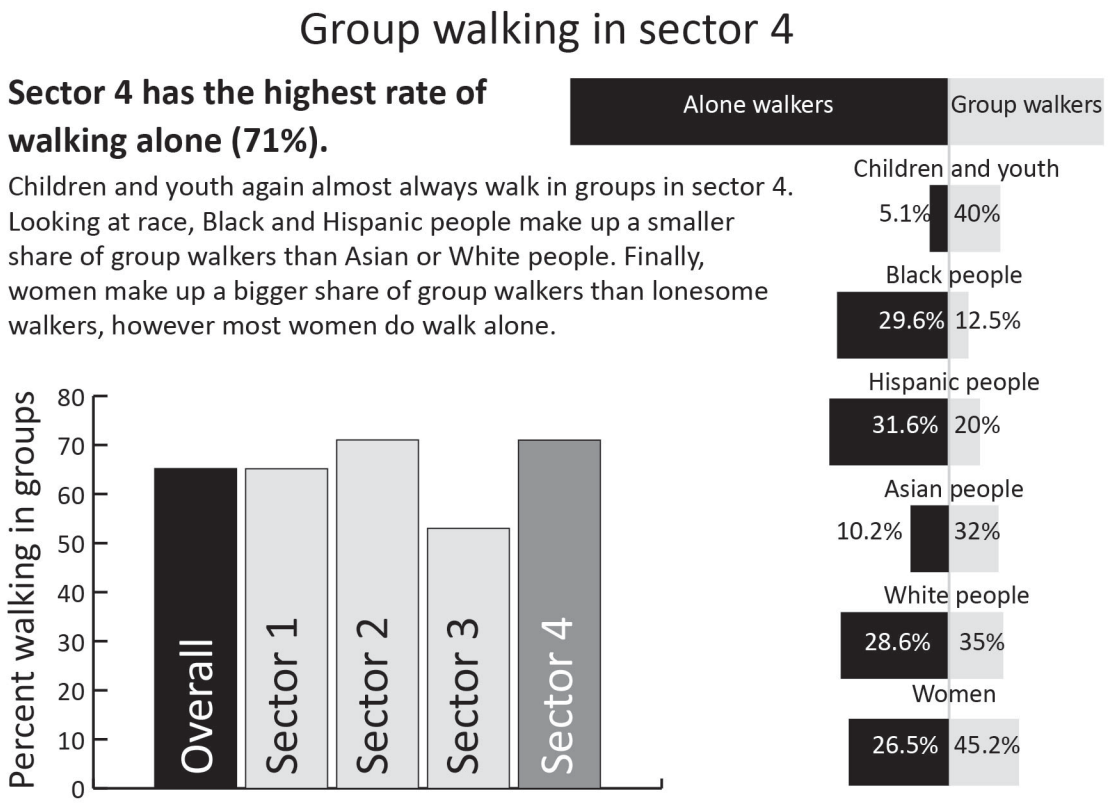


Figure 5.19: Group walking in Sector 4

That is, no children walked alone and only five youth walked alone, while six children and 10 youth walked with groups. As seen in Figure 5.20, this sector's young people are slightly more likely to be female and far more likely to be either White or Black.

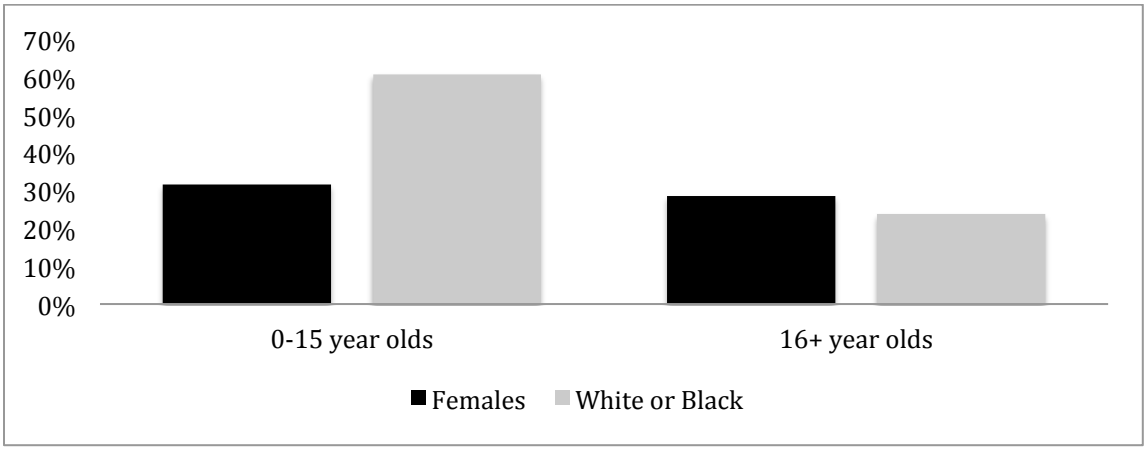


Figure 5.20: Sector 4's young people by gender and race

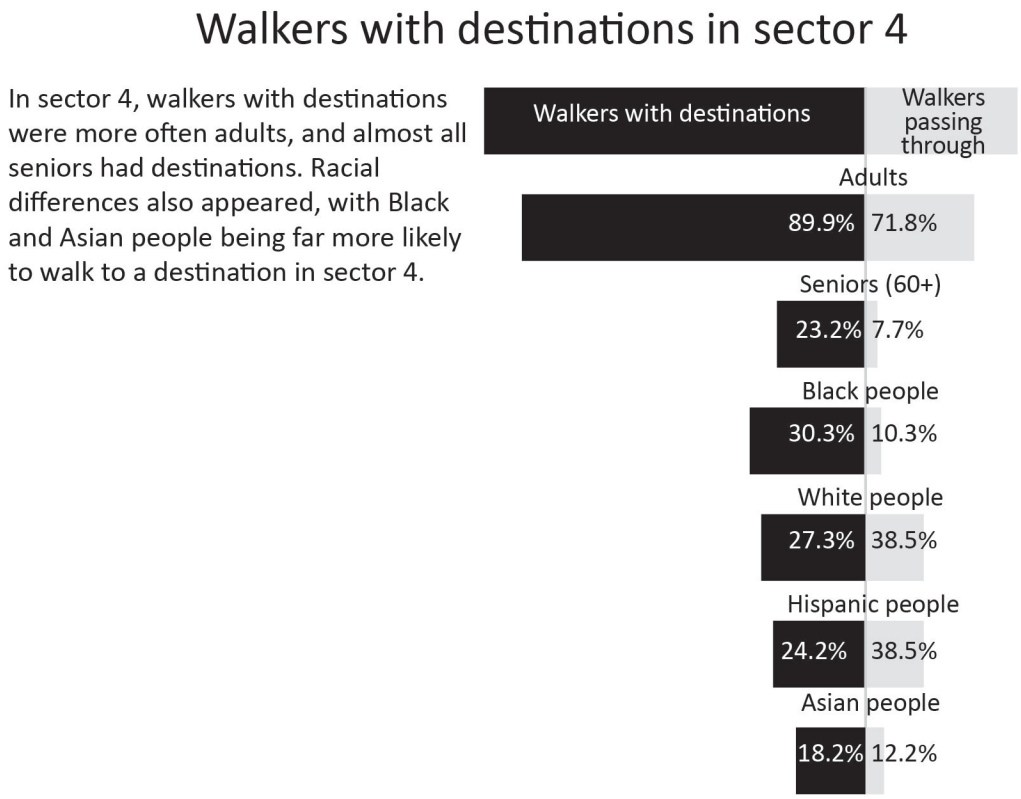


Figure 5.21: Walkers with destinations in Sector 4

Regarding the type of paths people made, this sector was a key "destination" sector, meaning many people started or stopped their paths here. This sector has three common destinations: the bus stop on North Lamar, where 68 people went or came from, Walgreens, with 24 paths, Sonic, with 11 paths, and another bus stop on Rundberg with 11 paths. Combined, 99 of the 138 paths in this sector went to at least one of these four destinations (there was some overlap of people's paths having multiple destinations; interestingly the paths that went to Sonic and Walgreens were mutually exclusive.). This also tells us that only 39 paths "passed through" this sector without stopping at one of those major destinations. While gender distribution did not tend to vary between those

who went to destinations and those who passed through, age and race did, as shown in Figure 5.21.

This sector also has a number of routes, often shortcuts, which depart from "engineered" paths such as sidewalks and crosswalks. We see among the key routes highlighted above in Figure 5.17 a desire path in the grass connecting the Walgreens and Sonic parking lots. There was also a clear route cutting the corner of the Sonic lot. While it may seem obvious that people will cut corners when walking to create a shorter route, we saw very little of this in the other three sectors. Indeed, this is the only corner of the Rundberg and Lamar intersection where people make a major shortcut route. Another important route that emerged is connecting Lamar to Walgreens following the driveway that is closest to the store's entrance.

To summarize, the three principal findings from my study were (1) many people take similar paths, creating what I call "routes;" (2) there are hotspots where different kinds of people tend to walk; and (3) there are some destinations that tend to draw people and there are some places where people only tend to walk through. Chapter 6 will consider more broadly the final conclusions of my study as well as the implications and importance of my findings.

Chapter 6: Discussion and Conclusion

Informed by the perspective of everyday urbanism (Chase et al., 2008; Kelbaugh, 2000; Kelbaugh & McCullough, 2008), my thesis aimed to explore the landscape of Rundberg Lane and North Lamar Boulevard in Austin, Texas, from the perspective of a pedestrian. My research consisted of 16 hours of field observations conducted in October 2016, supplemented by 10 short interviews with random pedestrians and personal visual observations of the urban environment. My research aimed to answer the question: How do people produce paths in everyday urban spaces? This question breaks down into sub questions about the spatiality of people's paths, the demographic characteristics of who makes these paths, and to what extent those paths produce routes. I did not merely count how many pedestrians there are or simply map the formal pedestrian routes such as sidewalks and crosswalks. Rather, this thesis has described in detail where people's actual paths are, showing a more complete picture of the pedestrian environment than what a sidewalk map or pedestrian count would say. Documenting paths in such a way has allowed me to place them at a fine-grained scale within the everyday environment of Rundberg and Lamar.

As noted earlier in Chapter 5, there are three principal lessons to take away from this analysis:

1. Many people take similar paths, creating what I call "routes."
2. There are hotspots where different kinds of people tend to walk.
3. There are some destinations that tend to draw people and there are some places where people only tend to walk through.

The first lesson is not a surprise as it was the assumption behind my research: people clearly do tend to walk in certain routes. However, my research helps us

understand why the routes are where they are. The general idea that people create routes also supports the contention that space is socially produced by the actions and movements of people through space.

The second thematic finding—that there are hotspots where different kinds of people tend to walk—likely relates to the built and social environment. That is, urban environments have an effect on where, for example, women and men decide to walk or where people choose to go when they're walking in groups or alone. That the shopping center with a variety of ethnic shops and restaurants is a hotspot for nonwhite walkers may come as no surprise, but it is important to realize this: if we want to encourage spaces with diverse people, we need spaces that represent that sort of diversity. Additionally, by understanding, for example, that the route from Rundberg to the HEB is a hotspot for women walkers, planners and designers can consider both why this occurs and the specific walking needs of women when creating such spaces.

Finally, the third findings reminds us that some spaces are used for passing through while others are places where people start and end their walking routes. Knowing where these different spaces are located can facilitate more appropriate plans and designs. For example, spaces where people pass through may require elements related to transiting, such as trash cans or trees, while spaces where people start and end their routes may require other elements related to congregating, such as benches or chairs.

Thus, these thematic findings suggest a way of looking at urban spaces to better inform and make sense of how they are being walked through. These findings have important implications for planning theory and practice.

IMPLICATIONS FOR PLANNING THEORY

My findings of path-making in the Rundberg and Lamar area of Austin provide important insights into how space is produced (Lefebvre, 1991) by walking in "everyday" environments. First of all, people's walking seems to defy what the planning literature would say is a "walkable" environment. Secondly, my findings are illuminated by the literature of everyday urbanism and Michel de Certeau, who would valorize this kind of non-monumental, "everyday" space. Walking, then can be seen as a "tactic" by which "the weak" express their will on the city (de Certeau, 2011).

As discussed earlier, a broad range of walkability literature explains how encouraging walking requires good design and planning. Looking to this literature, it may seem that Rundberg and Lamar is not a place we should see many people walking. Architects such as Gehl, for example, suggest that the design of the built environment is the primary influencer of pedestrianism (Gehl, 2011). Similarly, another architects note the importance of historic streets that are designed for people rather than cars (Rudofsky, 1969). More empirical research oriented to practicing planners shows the need for "(1) connectivity; (2) linkage with other modes; (3) fine grained land use patterns; (4) safety; (5) quality of path; and (6) path context" (Southworth, 2005) as well as the physical form's effect on how people use space (Alfonzo, 2005; Ewing et al., 2016; Gehl, 2011; Handy, 1996; Hass-Clau, 2015; Whyte, 1988). Furthermore, the discourse in Austin adds to this largely academic discussion by pointing to Rundberg and Lamar as a "dangerous" area because of fatal traffic crashes and crime (Harmon, 2014; Wear, 2015; Whittaker, 2016; Yuma & Springer, 2014).

My research acknowledges the importance of this research but seeks to examine the actual walking experience at a finer scale to better understand how practicing planners can help create spaces for walking. As I have discussed in my thesis, Rundberg

and Lamar is indeed a place where people walk despite poor design and low personal safety. People walk for daily needs, such as buying groceries, catching the bus, and even physical fitness, forming an intricate network of paths and routes. Often people's walking paths cluster and form routes along loud roads with high rates of traffic fatalities, in areas without pedestrian-oriented design, and places with a spotty sidewalk network that simply follows the edges of the streets.

As I have argued, the pedestrian environment around Rundberg and Lamar is the essence of an "everyday" urban space: the sort of under-designed, unglamorous, liminal urban space that the "everyday urbanism" perspective valorizes for its use by traditionally marginalized communities. This study is premised on the idea of everyday space as defined by Chase et al. (2008): "Everyday space stands in contrast to the carefully planned, officially designated, and often under-used public spaces that can be found in most American cities" (p. 6). Rather the landscape of everyday life tends "to be banal and repetitive, everywhere and nowhere, obvious yet invisible" (Chase et al., 2008, p. 6). Being around Rundberg and Lamar this impression becomes clear. The neon Sonic and Walgreen's signs could be found on any U.S. street corner. Yet the subtle uniqueness of the corner – cars circled around the ribbed metal siding of El Tacorrido and the Rundberg Running Man sprinting across the sidewalks – reminds the pedestrian that this is home. Amid all of this, people are walking, traversing the H-E-B parking lot as they connect from one bus stop to another, enjoying the shaded walkway and amusing sounds of the multicultural shopping center as they walk from the Villas apartment complex to visit the Little Walnut Creek Library, or stopping before the driveway into the Walgreens parking lot while out for evening exercise to let a car pass by. Indeed, looking at the everyday use of space valorizes this "view from below" (de Certeau, 2011; Soja, 1996).

All those experiences mentioned in the previous paragraph were real, shared with me by people walking in the Rundberg and Lamar area. These snippets of everyday life demonstrate walking as a tactic that is the "art of the weak" (de Certeau, 2011). As explained earlier, de Certeau defines strategies as the top-down work of the powerful – the planners, the engineers, and the designers. Walking is, however, the bottom-up tactic of the everyday citizen. People walking in the Rundberg and Lamar area tactically create "routes," many of which are not located along formal paths such as sidewalks. Thus, in response to hegemonic state "planning" (Gottdiener, 1985), people are challenging the "proper" processes of the city, countering the "officially sanctioned urbanism" that would tell them to stick to the sidewalks and crosswalks built into the landscape (Elsheshtawy, 2010, p. 60).

While Rundberg and Lamar has been produced through planning discourse, media coverage, and police policies as a dangerous place, large numbers of people socially produce routes daily in the Rundberg and Lamar area by walking along consistent paths. Drawing on Lefebvre's (1991) notion that space can be socially produced through people's actions, we can test the Rundberg and Lamar area's walkability by looking at what environments people produce as places for walking. For example, the walking routes through certain areas of the parking lots, such as along the grassy strip north of the gas station in Sector 3, indicate those are produced as walking environments. Other areas, such as the corner of the multicultural shopping center's parking lot closest to the Rundberg and Lamar intersection have an absence of walking paths, indicating their social production as an unwalkable area.

IMPLICATIONS FOR PLANNING PRACTICE

My findings also having implications for planning practice. First, my research, I believe, supports the need for planners, designers, and other "strategists" (see de Certeau, 2011) to understand everyday use of place by taking time to observe it over time. Planners, designers, engineers, and other working with the built environment ought to observe a space before executing interventions in that place, since merely a few hours of observation would yield a great deal of rich experiential data to inform design and planning. This kind of research helps us to understand the "lived experience" of walking, which from the perspective of everyday urbanism is "more important than physical form in defining the city" (Chase et al., 2008). The focus on experience reveals the socially constructed form of the city, which is obscured in plans and other "strategies".

Furthermore, the planning literature emphasizes the "importance of ordinary citizens," calling for planners and designers to "uncover people's talents and then incorporate them into the process in a meaningful way" (Project for Public Spaces, Inc., 2000). Thus, I echo the call made by Wegmann and Bell (2016), suggesting that planners would benefit from such *in situ* research to improve their work. If those responsible for designing pedestrian spaces are not taking the time to simply see how people use it, how are they going to be able to make a positive change to their walking environment?

Secondly, my research indicates that pedestrian production of place is complex and nuanced, and that it cannot be guided by simple "best practices." My research shows that people produce space because of—and even despite of—built forms that are both intended to support walking (e.g. sidewalks) and to exclude walking (e.g. roadways where there are no crosswalks or grassy areas and shrubbery). However, pedestrian routes often emerge in spite of urban features not supportive of walking. This is seen in the large number of paths that cross Rundberg between Sectors 1 and 2 outside of the crosswalks.

In addition, clear walking routes emerged on landscaping that appears meant to separate spaces, most notably through the grass and shrubs along the route connecting the Lamar sidewalk to Walgreens from the edge of the Sonic parking lot. Indeed, the path beaten into the grass by this frequently used route indicates that the shrub and tree were no barrier to pedestrians trying to construct a connection between Lamar and Walgreens.

CRITICAL PERSPECTIVES

However, it is also important to not be entirely lost in a view of path making as a benign, productive activity. In this final section I will take a critical perspective on path making, taking care to not submit to simplistic assumptions of everyday urbanism. In particular, it is important not to valorize walking as a tactic that shows marginalized people's expression of power on the built environment. Indeed, it is not totally benign that people walk in large numbers around Rundberg and Lamar, cutting across the streets and parking lots. The conception of the area as dangerous is based on real and fatal traffic crashes. It has one of the highest concentrations of injury and fatal pedestrian crashes outside of downtown, where there is a vastly higher population and amount of traffic (City of Austin, 2015a). Also, this study shows that the walking spaces in this area are racialized, gendered, and may be otherwise segregated in ways that further research can reveal.

That the spaces were gendered can be explained by a wide body of feminist geography that is beyond the scope of this paper (Bridger, 2013; Munson, 2002). However women's hotspots could also indicate spaces where women are using "tactics" to create paths that bypass uncomfortable and dangerous places. Racialized spaces found in the hotspot analysis are an example of how space is "produced" by people's performance, but also perhaps indicates the influence of the built environment on who

uses the space. For example, the shopping center with a Chinese restaurant store, Spanish-language locksmith, and South Asian restaurant was a hotspot for nonwhite walkers. But it takes the social actions of people walking through the area to make the space appear to be a nonwhite space.

Ultimately, I do not wish to romanticize everyday urbanism and the experience of walking (Middleton, 2011). Indeed, there are real structural, political-economic realities that lead cities to spend more public funds on walkable environments in places not like the Rundberg and Lamar area. The literature around insurgency (Holston, 1999; Hou, 2010) suggests that everyday practices and citizen organizing can be understood as responses to these deep structural problems. Indeed, Austin's recent attempts to address the area's traffic safety with targeted transportation infrastructure spending (City of Austin, 2016; Wear, 2015) indicates the city may be trying to reverse this structural inequality through the formal, top-down process of transportation infrastructure improvements.

SUGGESTED IMPROVEMENTS TO THE PEDESTRIAN ENVIRONMENT

Throughout the area, common improvements could be made to the roadway to help better separate pedestrians from cars, addressing their need for safety (Alfonzo, 2005; Ding, 2012; Schneider, 2013; Southworth, 2005). Trash cans could be added along the sidewalks. These would not only act as a buffer between the street and walking area: they would also lead to a cleaner environment, as there are no trash cans along the streets in my study area except at bus stops. In addition, the long driveways that cut through the sidewalks could be painted to highlight them for drivers, similar to how bike lanes are often painted to enhance cyclist safety.

To address what Holston (1999) describes as the abolished system of public space along the streets, I would propose a series of improvements aimed at enhancing the

already-used public spaces around Lamar and Rundberg. First, this would include improving the open space on the northwest corner of the intersection, in the HEB parking lot, into a small public plaza. This could include crushed granite path, a space for a food truck, a demonstration rain garden, and seating. This plaza should be built by the city in partnership with HEB, which owns that property.

The system of stormwater ponds in sector 3 along Lamar could also be improved for the sake of pedestrians. Currently fenced-off basins of grass that fill with wildflowers in the springtime, the stormwater detention ponds in this study area are a missed opportunity to use more contemporary green infrastructure techniques to beautify the walking environment for pedestrians (in addition to the watershed improvements that are beyond the scope of this thesis). The City of Philadelphia's Green City, Clean Water green infrastructure plan serves as a national model of using small-scale green infrastructure projects, with city leadership, support, and financing, and could be reviewed for insight (Philadelphia Water Department, 2011). The ponds could be turned into tree trenches, trees that are connected an underground infiltration system to manage runoff, or rain gardens, a moderately depressed area with native plants designed to filter stormwater runoff. These improvements could be funded by the city and used as a demonstration project to encourage other developers and residents to include such valuable systems on their properties too.

Similarly, the parking lots in the area could also be used as demonstration projects designed to showcase the benefits of another policy I would like to suggest: the city should require large parking lots to include an improved pedestrian pathway. Given my findings about parking lot walking, it seems that pedestrians are encouraged to take certain routes in a parking lot if the built environment encourages is, for example with a

concrete pathway and trees. Such a policy should be explored and the high-pedestrian-use parking lots of my study area could be chosen to demonstrate such a policy.

Ultimately, it is my hope that my research will help expand the conversation of walkability to encompass the sort of environment I am studying: underserved, often forgotten-by-policymakers sections of cities where a productive urban life indeed exists. Furthermore, I hope this study shows how people's actual use of the urban environment may provide insights for planners, designers, and policymakers concerned with making integrated, useful, and attractive public spaces for "everyday" urban environments.

Appendix A: Observation protocol

1. Stand at each of the following locations around the intersection of Rundberg Lane and North Lamar Boulevard on a weekday (Monday-Thursday) evening (5 – 7 p.m.) and weekday (Monday-Friday) mid-morning (9:30 – 11:30 a.m.):

    a. In the HEB parking lot nearest the northeast corner of the intersection, trying to view all intersection crossings and paths through and around the HEB parking lot;

    b. On the northern end of the Northgate Shopping Center along the walkway in front of Advance Auto Parts to view from the southern side of Rundberg to paths along the storefronts;

    c. North of the HEB gas station between the first and second driveway off North Lamar to review paths around and through the gas station and crossing across Lamar;

    d. On the grass strip between Sonic and Walgreens to view paths along the eastern side of Lamar, the southern side of Lamar, and through/around the Sonic and Walgreens lots.

2. At the start of the observation period, write on the back of the first map the date and time of observations. Also mark on the first map the location of observations.

3. Document all the paths made by a walker for as long as the walker is visible and in the mapping area that corresponds to the sector being observed. Do not try to document every "micro-variation" in walking, for example if whether the person walked on the left side of the concrete sidewalk or the right. Do make it clear whether the person is walking on one or another surface when it is possible to observe, for example whether the walker is on one side of a trash can, or whether the walker goes on a grass strip or a sidewalk.

4. Use pens of the following colors once on each map for a maximum of six paths per map: black, purple, magenta, blue, green, and orange.

5. Using the same color as is depicting a walker's path, the observer will write on the back of the map a code noting the following information, based on the observer's judgment:

    a. Approximate age: 1= child aged 0-11

2= early adolescent, aged 12-15

3= youth/young adult, aged 16-30

4= adult, aged 31-59

5= senior, aged 60+

b. Race:
A= Asian

B= Black (African/African-American/etc)

H= Hispanic/Latin American

W= White

O= Other/mixed

c. Sex:
M= male

W= woman

d. Group status:
A= walking alone

G= walking with a group

e. Wheelchair status:
N= not in a wheelchair

Y= in a wheelchair

The back of the map will have a list of six codes, each in a different color. The following code, for example, will mean it is depicting a young adult$_{\text{approximate age}}$ black$_{\text{race}}$ woman$_{\text{sex}}$ who is walking$_{\text{wheelchair status}}$ alone$_{\text{group status}}$: 3BWAN.

6. Make a maximum of 100 observations (17 sheets of paper) per 2-hour segment.

7. When observations are complete, staple all sheets from one observation period together.

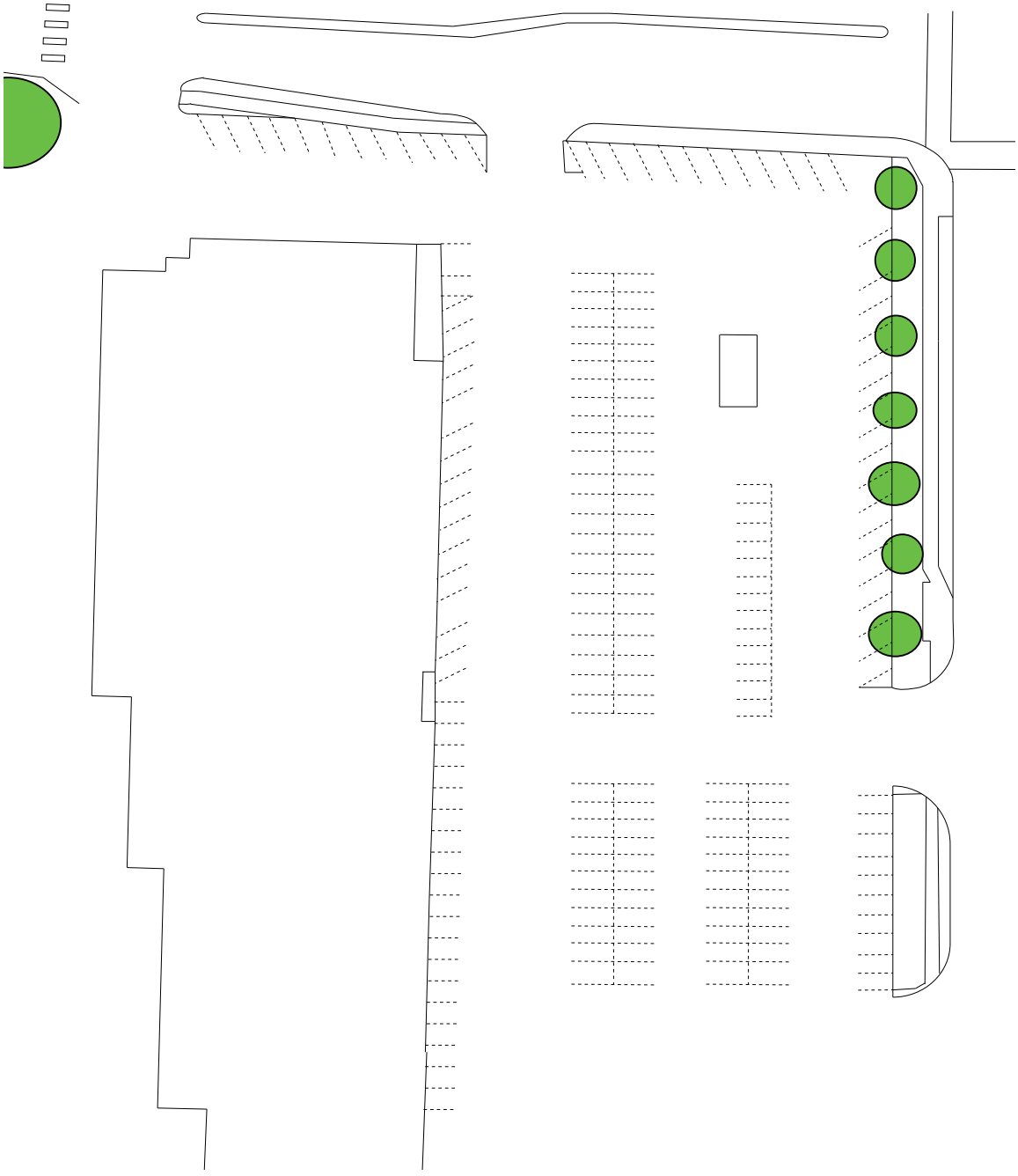
Appendix B: Sector maps

Sector 1 map

Date:_____
Time:_____

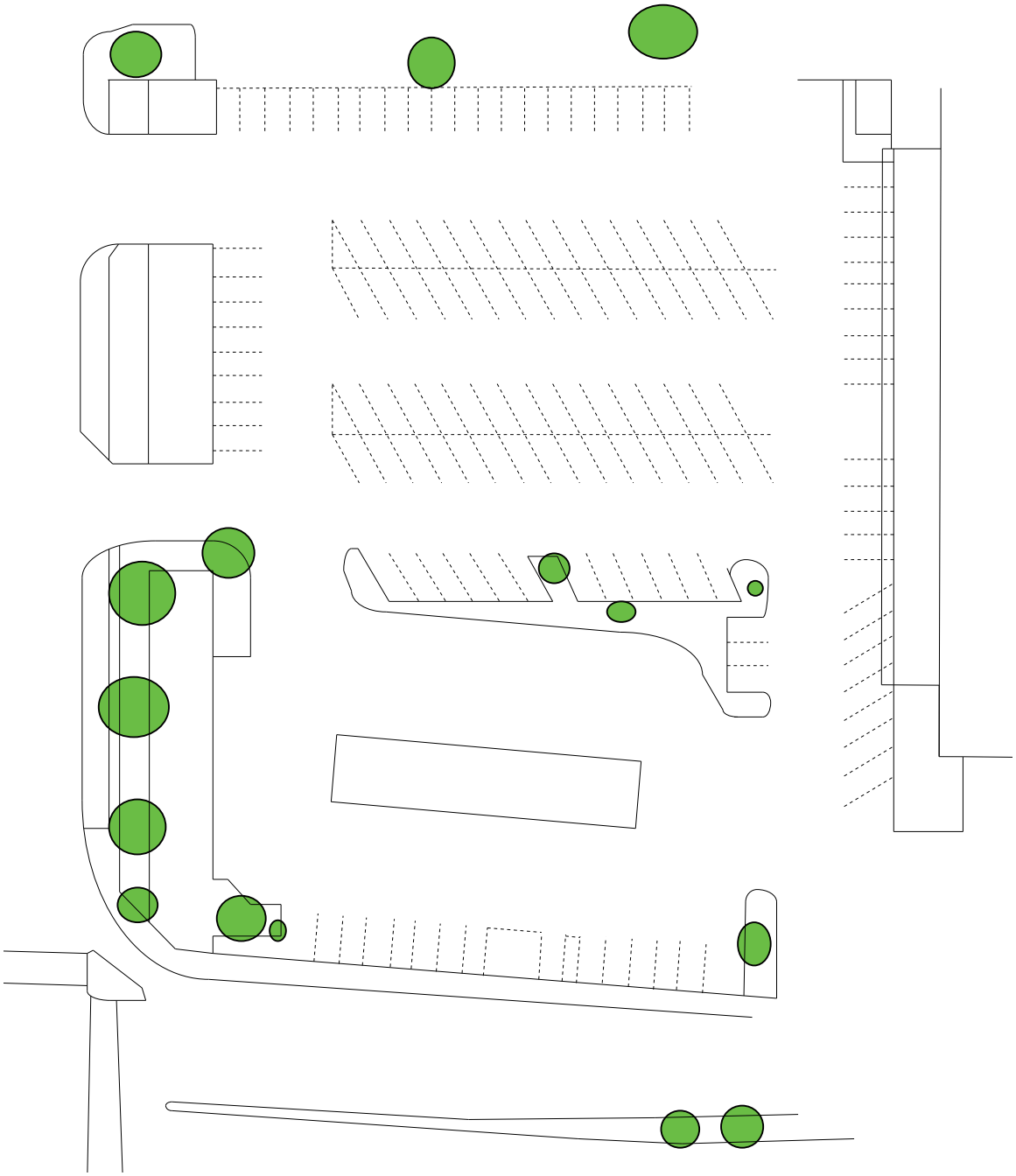
Sector 2 map

Date:_____
Time:_____



Sector 3 map

Date:_____
Time:_____



Sector 4 map

Date:_____
Time:_____

Appendix C: Interview questions

Code: _____ Date: _____ Sector: _____

1. What are different places you walk to around Rundberg and Lamar?

2. How often do you walk around Rundberg/Lamar?
    a. Every day
    b. A few days a week
    c. A few days a month
    d. Once a month or less

3. Are there areas you avoid walking? Why do you avoid those areas?

4. Are there areas you tend to walk? What attracts you to walk in those areas?

5. What improvements would you suggest to make this area more walkable?

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